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OBSTETRICAL TRANSACTIONS.

VOL. XXVIII.

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TRANSACTIONS

OF THE

OBSTETRICAL SOCIETY

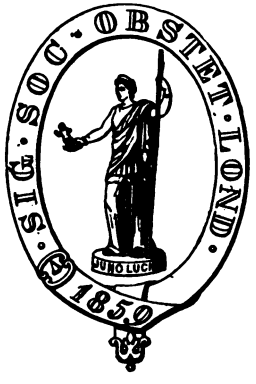
OF

LONDON.

VOL. XXVIII.

FOR THE YEAR 1886.

WITH A LIST OF OFFICERS, FELLOWS, ETC.



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Taylor, John W., M.D.	Scarborough.
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Childs, Christopher, M.B.	Weymouth.
Harris, William John	Worthing.
Harvey, Robert, M.D.	Calcutta.
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1862 DUNCAN, JAMES MATTHEWS, M.D., A.M., LL.D., F.R.S. Physician-Accoucheur to, and Lecturer on Midwifery and Diseases of Women and Children at, St. Bartholomew's Hospital; 71, Brook street, Grosvenor square, W. *Council*, 1878-80, 1886-7. *Pres.* 1881-82. *Trans.* 19.

1870 FARRE, ARTHUR, M.D., F.R.S. (HON. PRES.), Physician-Accoucheur to H.R.H. the Princess of Wales; 18, Albert Mansions, Victoria street, Westminster. *Trans.* 1.

1871 KEILLER, ALEXANDER, M.D., F.R.S. Ed., Physician to the Royal Maternity Hospital, Lecturer on Midwifery and Diseases of Women and Children at Surgeons' Hall, Edinburgh; 21, Queen Street, Edinburgh.

1871 KIDD, GEORGE H., M.D., F.R.C.S.I., Obstetrical Surgeon to the Coombe Lying-in Hospital; 30, Merrion square south, Dublin.

Elected

1870 WEST, CHARLES, M.D., F.R.C.P., Corresponding Member of the Academy of Medicine of Paris ; 55, Harley street, W. *Pres.* 1877-8.

FOREIGN SUBJECTS.

1872 BARKER, FORDYCE, M.D., Professor of Clinical Midwifery and Diseases of Women at the Bellevue Hospital Medical College, and Obstetric Physician to the Bellevue Hospital ; 85, Madison avenue, New York.

1863 BRAUN, CARL, M.D., Professor of Midwifery, Vienna.

1863 FAYE, F. C., M.D., Professor of Midwifery in the University of Christiania.

1866 HUGENBERGER, THEODOR, M.D., à la Maternité et aux Enfants Trouvés Hôpital des Accouchements, Moscow.

1866 LAZAREWITCH, J., M.D., Kharkoff, Russia. *Trans.* 3.

1864 PAJOT, CH. M.D., late Professor of Midwifery to the Faculty of Medicine, Paris.

1862 SCANZONI, F. W. VON, M.D., Professor of Midwifery, Würzburg.

1877 STOLTZ, Professor, M.D. Nancy.

1872 THOMAS, T. GAILLARD, M.D., Professor of Obstetrics in the College of Physicians and Surgeons ; 296, Fifth avenue, New York.

1862 VIRCHOW, RUDOLF, M.D., Professor of Pathological Anatomy in the University of Berlin.

CORRESPONDING FELLOWS.

Elected

1873 MARTIN, A. E., M.D., Berlin. *Trans.* 1.

1876 BUDIN, P., M.D., 129, Boulevard St. Germain, Paris. *Trans.* 1.

1876 CHADWICK, JAMES R., M.A., M.D., Physician for Diseases of Women, Boston City Hospital; Clarendon street, Boston, Massachusetts, U.S.

1877 GOODELL, WILLIAM, A.M., M.D., Professor of Clinical Gynæcology in the University of Pennsylvania; Philadelphia, Pennsylvania.

1876 LUSK, WILLIAM THOMPSON, M.D., Professor of Obstetrics, Bellevue Hospital Medical College; New York.

1876 PREVÔT, OSCAR, M.D., Moscow.

1877 STORER, HORATIO R., M.D., Newport, Rhode Island, U.S.A.

ORDINARY FELLOWS.

1887.

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The letters O.F. are prefixed to the names of the "Original Fellows" of the Society.

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1887 ACHARD, ALEXANDER LOUIS, L.R.C.P., 77, Welbeck street, W.

1884 ADAMS, THOMAS RUTHERFORD, M.D., Stamford House, 78, St. James's road, Croydon.

1879 ADDIS, PHILIP, M.R.C.P., Milton Lodge, Iver, Bucks.

1878 ALFORD, FREDERICK STEPHEN, 61, Haverstock hill, N.W.

1883 ALLAN, ROBERT JOHN, L.R.C.P. Ed., Raymond terrace, Hunter River, New South Wales. [Per Alexander Allan, Esq., Glen House, The Valley, Scarborough.]

1873 ALLEN, HENRY MARCUS, F.R.C.P. Ed., 20, Regency square, Brighton.

1878 ANDERSON, IZETT WILLIAM, M.D., 95, Duke street, Kingston, Jamaica. *Trans.* 1. *Hon. Loc. Sec.*

1875 ANDERSON, JOHN FORD, M.D., C.M., 1, Buckland crescent, Belsize park, N.W. *Council*, 1882.

1866 ANDREWS, HENRY CHARLES, M.D., 11, Addison terrace, Notting Hill, W. *Council*, 1882-3.

1859 ANDREWS, JAMES, M.D., Everleigh, Green hill, Hampstead, N.W. *Council*, 1881.

1884 APPLEFORD, STEPHEN HERBERT, L.R.C.P. Lond., 16, Finsbury circus, E.C.

Elected

1870 Appleton, Robert Carlisle, The Bar House, Beverley.

1884 Appleton, Thomas A., 46, Britannia road, Fulham, S.W.

1883 Archibald, John, M.B., Lynton House, Brixton Rise, S.W.

1871 Argles, Frank, L.R.C.P. Ed., Hermon Lodge, Wanstead, Essex, N.E. *Council*, 1886-7.

1861 Armstrong, John, M.D., Green street green, Dartford, Kent.

1886 Ashe, William Percy, L.R.C.P. Lond., The Common, Chislehurst.

O.F. Aveling, James H., M.D., Senior Physician to the Chelsea Hospital for Women; 1, Upper Wimpole Street, W. *Council*, 1865-66, 1872, 1884. *Hon. Sec.* 1873. *Hon. Lib.* 1874-6. *Vice-Pres.* 1877-8. *Board Exam. Midwives*, 1872, 1875-83 (*Chairman*, 1878-83). *Trans.* 9.

1872 Ayling, Arthur H. W., 94a, Great Portland street, W.

1880 Bailey, Francis James, 51, Grove Street, Liverpool.

1873 Bailey, James Johnson, M.D., F.R.C.S. Ed., Woodville Cottage, Marple, Cheshire.

1880 Balls-Headley, Walter, M.D., 127, Collins street east, Melbourne, Victoria.

1869 Bantock, George Granville, M.D., Surgeon to the Samaritan Free Hospital; 12, Granville place, Portman square, W. *Council*, 1874-6. *Trans.* 2.

1886* Barbour, A. H. Freeland, M.D. Edin., 24, Melville street, Edinburgh.

O.F. Barnes, Robert, M.D., F.R.C.P., Consulting Obstetric Physician to St. George's Hospital; 15, Harley street, Cavendish square, W. *Vice-Pres.* 1859-60. *Council*, 1861-62, 1867. *Treas.* 1863-64. *Pres.* 1865-66. *Trans.* 32. *Trustee.*

1875 Barnes, R. S. Fancourt, M.D., Physician to the Chelsea Hospital for Women; 7, Queen Anne street, Cavendish square, W. *Council*, 1879-81. *Board Exam. Midwives*, 1880-2. *Trans.* 2.

1877 Barnes, Thomas Henry, M.D., 54, London road, Croydon.

Elected

1884 Barraclough, Robert W. S., M.D., 34, Dulwich road, Herne hill, S.W.

1886 Barron, Hunter Jackson, M.D. Edin., The Hawthorns, Church End, Finchley, N.

1887 Barton, Henry Thomas, 63, Harford street, E.

1887 Barton, William Edwin, L.R.C.P. Lond., Burwash, Hawkhurst.

1861* Bartrum, John S., F.R.C.S., Surgeon to the Bath General Hospital; 13, Gay street, Bath. *Council*, 1877-9.

1866 Bassett, John, M.D., Professor of Midwifery at the Queen's College, Birmingham; 144, Hockley Hill, Birmingham. *Council*, 1874-6. *Vice-Pres.* 1880-2. *Trans.* 3.

1885 Bastable, Daniel Herbert, L.K.Q.C.P.I., 47B, Welbeck street, W.

1873 Bate, George Paddock, M.D., 412, Bethnal Green road, E; and 2, Northumberland Houses, King Edward road, Hackney. *Council*, 1882-4.

1886 Bates, Tom, L.R.C.P. Ed., 44, Foregate street, Worcester.

1867 Batten, Rayner W., M.D., Physician to the Gloucester General Infirmary; 1, Brunswick square, Gloucester. *Council*, 1886-7. *Hon. Loc. Sec.*

1871 Beach, Fletcher, M.B., Darenth Asylum, Dartford, Kent.

1871 Beadles, Arthur, Park House, Dartmouth Park, Forest hill, S.E.

1885 Beatty, William John, L.R.C.P. Ed., Stockton-on-Tees.

1866 Belcher, Henry, M.D., 12, Pavilion parade, Brighton.

1871 Bell, Robert, M.D. Glasg., 29, Lynedoch street, Glasgow.

1880 Benington, Robert Crewdson, 90, Sinclair road, Kensington, W.

1873* Bennet, James Henry, M.D., Mentone. *Council*, 1881-3. *Trans.* 1.

O.F. Berry, Samuel, F.R.C.S., Consulting Surgeon-Accoucheur to the Queen's Hospital, and Professor of Midwifery and the Diseases of Women and Children in the Queen's College, Birmingham; Hatfield, Cavendish road, Clapham park, S.W. *Vice-Pres.* 1859. *Trans.* 1.

Elected

1883 Bertolacci, J. Hewetson, Varden House, St. John's hill, New Wandsworth, S.W.

1887 Beswick, Robert, 145, Bishopsgate street, E.C.

1887 Biden, Charles Walter, L.R.C.P. Lond., Helmsley, Yorkshire.

1879 Biggs, J. M., Hillside, Cricklewood lane, Child's hill, N.W.

1868 Black, James Watt, M.D., Obstetric Physician to the Charing Cross Hospital; 15, Clarges street, Piccadilly, W. *Council*, 1872-4. *Vice-Pres.* 1885-6. *Chairman, Board Exam. Midwives*, 1887.

1880 Black, Robert Francis, L.R.C.P. Ed., Examiner in Midwifery, Trinidad Medical Board; 4, Chacon street, Port of Spain, Trinidad.

1861* Blake, Thomas William, Hurstbourne, Bournemouth Hants.

1872 Bland, George, Surgeon to the Macclesfield Infirmary; Park Green, Macclesfield.

1883 Bonney, William Augustus, M.D., 145, Beaufort street, Chelsea, S.W.

1872 Bosworth, John Routledge, Grove End, Sutton, Surrey.

1886 Bothamley, Richard Broughton, 20, Widmore road, Bromley, Kent.

1866 Boulton, Percy, M.D., Physician to the Samaritan Free Hospital, 6, Seymour street, Portman square, W. *Council*, 1878-80, 1885. *Hon. Lib.* 1886. *Hon. Sec.* 1886-7. *Trans.* 3.

1885 Bourke, William Henry, L.K.Q.C.P.I., 8, Moreton gardens, South Kensington, S.W.

1886 Boustead, Robinson, M.D., 4, Adelaide crescent, Brighton.

1877 Bowkett, Thomas Edward, 145, East India Road, Poplar, E.

1884 Boxall, Robert, M.D., Physician to the General Lying-in Hospital; 6, Nottingham terrace, York gate, N.W.

1885 Boyle, Thomas, Newquay, Cornwall.

1884 Boys, Arthur Henry, L.R.C.P. Ed., Lodway Villa, Pill, Bristol.

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1886 BRADBURY, HARVEY K., 9, Schubert road, Putney, S.W.

1877 BRADLEY, MICHAEL MCWILLIAMS, M.B., Jarrow-on-Tyne.

1873 BRAITHWAITE, JAMES, M.D., Obstetric Physician to the Leeds General Infirmary; Lecturer on Diseases of Women and Children at the Leeds School of Medicine; 16, Clarendon road, Little Woodhouse, Leeds. *Vice-Pres.* 1877-9. *Trans.* 4. *Hon. Loc. Sec.*

1880 BRANFOOT, ARTHUR MUDGE, M.B., Superintendent of the Government Lying-in Hospital, Madras, and Professor of Midwifery and Diseases of Women and Children in the Madras Medical College, Pantheon road, Madras. *Hon. Loc. Sec.*

1875 BREWER, ALEXANDER HAMPTON, 201, Queen's road, Dalston, E. *Trans.* 1.

1862 BRICKWELL, JOHN, Sawbridgeworth, Herts.

1887 BRIDGER, ADOLPHUS EDWARD, M.D. Ed., Walterton house, Walterton road, W.

1872 BRIDGWATER, THOMAS, M.B., Harrow-on-the-Hill, N.W. *Council*, 1884.

1864 BRIGHT, JOHN MEABURN, M.D., Alvaston, Park hill, Forest hill, S.E. *Council*, 1873-74.

1869 BRISBANE, JAMES, M.D., 21, Park road, Regent's park, N.W.

1885 BRISCOE, JOHN FREDERICK, Cancer Hospital, Brompton, S.W.

1866 BRODIE, GEORGE B., M.D., Consulting Physician-Accoucheur to Queen Charlotte's Lying-in Hospital; 3, Chesterfield street, Mayfair, W. *Council*, 1873-75.

1876 BROOKHOUSE, CHARLES TURING, M.D., 43, Manor road, Brockley, S.E.

1868 BROWN, ANDREW, M.D. St. And., 1, Bartholomew road, Kentish town, N.W. *Trans.* 1.

1865 BROWN, D. DYCE, M.D., 29, Seymour Street, Portman square, W.

1876 BRUNJES, MARTIN, 9, York street, Portman square, W.

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1865 BRUNTON, JOHN, M.D., M.A., Surgeon to the Royal Maternity Charity; 21, Euston road, N.W. *Council*, 1871-3. *Vice-Pres.* 1882-4. *Board Exam. Midwives*, 1877-82. *Trans.* 6.

O.F. BRYANT, WALTER JOHN, F.R.C.S., M.R.C.P. Ed., 23A, Sussex square, Hyde park gardens, W. *Council*, 1859.

1870 BUCK, JOSEPH RANDLE, L.R.C.P. Ed., 26, Sidbury, Worcester.

1883 BUKSH, RAHEEM, Poplar Hospital, East India road, E.

1882* BULLER, AUDLEY CECIL, M.D., Oxford and Cambridge Club, Pall Mall, S.W.

1885* BUNNY, J. BRICE, L.R.C.P. Ed., Newbury.

1877 BURCHELL, PETER LODWICK, M.B., Surgeon-Accoucheur to the City of London Lying-in Hospital; 2, Kingsland road, E. *Council*, 1882-4. *Vice.-Pres.* 1885-7. *Board Exam. Midwives*, 1884-7. *Trans.* 1.

1877 BURD, EDWARD, M.D., M.C., Senior Physician to the Salop Infirmary; Newport House, Shrewsbury. *Council*, 1886-7. *Hon. Loc. Sec.*

1878 BURN, STACEY SOUTHERDON, M.B. Oxon., Tudor Lodge, Richmond, Surrey.

1878 BUTLER-SMYTHE, ALBERT CHARLES, M.R.C.P. Edin., 35, Brook street, Grosvenor square, W.

1868 BUTT, WILLIAM FREDERICK, L.R.C.P. Lond., 48, Park street, Grosvenor square, W. *Council*, 1876-78.

1887 BUXTON, DUDLEY W., M.D. Lond., 82, Mortimer street, Cavendish square, W.

1886 BYERS, JOHN W., M.D., Physician for Diseases of Women to the Royal Hospital, Belfast; Lower crescent, Belfast.

1883 CALDWELL, WILLIAM T. D., M.D., 284, Kennington park road, S.E.

1883 CAMERON, CHARLES HAMILTON HONE, L.R.C.P. Lond., Lochiel, Harlesden, Willesden, N.W.

1861 CANDLISH, HENRY, M.D., Physician to the Alnwick Infirmary; 26, Fenkle street, Alnwick, Northumberland.

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1863 Carlyle, David, M.D., 2, The Crescent, Carlisle. *Trans.* 1. *Hon. Loc. Sec.*

1886 Carpenter, Arthur Bristowe, M.A., M.B. Oxon., 34, Dingwall road, Croydon.

1872 Carter, Charles Henry, M.D., Physician to the Hospital for Women, Soho square; 45, Great Cumberland place, Hyde Park, W. *Council*, 1880-2. *Trans.* 4.

1877 Carver, Eustace John, Fairlawn, 635, Fulham road, S.W.

1869 Caskie, John Boyd, M.D., 19, Tyndale place, Islington, N.

1878 Caskie, William Alex., M.A., M.B., Manse Court, 17, Main street, Largs, Ayrshire, N. B.

1863 Cayzer, Thomas, Mayfield, Aigburth, Liverpool.

1875 Chaffers, Edward, F.R.C.S., 54, North street, Keighley, Yorkshire.

1873 Chalmers, John, M.D., 43, Caledonian road, N.

1876 Champneys, Francis Henry, M.A., M.B. Oxon., F.R.C.P., Obstetric Physician to, and Lecturer on Midwifery at, St. George's Hospital, 60, Great Cumberland place, W *Council*, 1880-1. *Hon. Lib.* 1882-3. *Hon. Sec.* 1884-7. *Board Exam. Midwives*, 1883. *Trans.* 8.

1859 Chance, Edward John, F.R.C.S., Surgeon to the Metropolitan Free Hospital and City Orthopædic Hospital; 14, Russell square, W.C.

1886 Chapman, Charles William, L.R.C.P. Lond., Denham house, Goldhawk road, Shepherd's Bush, W.

1867* Charles, T. Edmondstoune, M.D., Cannes, France. *Council*, 1882-4.

1874 Charlesworth, James, 25, Birch terrace, Hanley, Staffordshire.

1886 Charpentier, Ambrose E. L., M.B. Dur., 129, High street, Uxbridge.

1868 Child, Edwin, "Vernham," New Malden, Kingston-on-Thames, Surrey.

1883 Childs, Christopher, M.A., M.B. Oxon., 2, Royal terrace Weymouth. *Hon. Loc. Sec.*

Elected

1863* Chisholm, Edwin, M.D., Abergeldie, Ashfield, near Sydney, New South Wales. [Per Messrs. Turner and Henderson, care of Messrs. W. Dawson, 121, Cannon street, E.C.].

1885 Chittenden, Thomas Hillier, L.R.C.P. Lond., Whitwell, Welwyn.

1887 Chitty, Alfred Goldney, L.R.C.P., 14, Weston villas, Middle lane, Hornsey, N.

1883 Clapham, Edward, M.D., 29, Lingfield road, Wimbledon.

1859 Claremont, Claude Clarke, Millbrook House, 1, Hampstead road, N.W.

1887 Clark, Francis William, L.R.C.P. Lond., The Infirmary, Croydon.

1859 Clark, James Fenn, Clent House, Beauchamp square, Leamington. *Hon. Loc. Soc.*

1879 Clarke, Reginald, South Lodge, Lee park, Lee, S.E.

O.F. Clay, Charles, M.D., 39, Queen street, Blackpool.

1876 Clay, George Langsford, West View, 443, Moseley road, Highgate, Birmingham.

O.F. Clay, John, Professor of Midwifery, Queen's College, Birmingham; Allan House, Steelhouse lane, Birmingham. *Council*, 1868-69. *Vice-Pres.* 1872-4.

O.F. Cleveland, William Frederick, M.D., Stuart villa, 199, Maida vale, W. *Council*, 1863-64. *Vice-Pres.* 1875-77, 1887. *Trans.* 1.

1881 Close, James Alex, M.B., Summerfield, St. Clair Co., Illinois, U.S.

1865* Coates, Charles, M.D., Physician to the Bath General and Royal United Hospitals; 10, Circus, Bath.

1882 Coates, Frederick William, M.D., St. John street, Salisbury. *Hon. Loc. Sec.*

1878 Cockell, Frederick Edgar, Jun., Holly Lodge, Forest road, Dalston, E.

Elected

1875 Coffin, Richard Jas. Maitland, F.R.C.P. Ed., Alwington house, Baron's court, West Kensington, W.

1878 Coffin, Thomas Walker, 79, Queen's crescent, Haverstock hill, N.W.

1875* Cole, Richard Beverly, M.D. Jefferson Coll. Philad., 218, Post street, San Francisco, California, U.S.

1884 Collins, William Job, M.D., B.S., B.Sc. Lond., F.R.C.S. Eng., 1, Albert terrace, Gloucester gate, N.W.

1877 Colman, Walter Tawell, Hon. Surgeon to the Brighton Hospital for Women; 87, Buckingham road, Brighton,

1885 Cook, Philip Inkerman, M.D., Marmora House, Honor Oak, S.E.

1866 Coombs, James, M.D., Bedford.

1883 Cooney, John Edwin, L.R.C.P. Ed., 20 Vereker road, Baron's court, West Kensington, S.W.

1873 Cooper, Frank W., Gainsborough house, Leytonstone, E.

1874 Cooper, Herbert, L.R.C.P. Ed., Rosslyn hill, Hampstead, N.W.

1875* Cordes, Aug., M.D., Professor of Obstetrics at the University of Geneva; 12, Rue Bellot, Geneva. *Trans.* 1.

1883 Corner, Cursham, 128, Mile End road, E.

1860 Corry, Thomas Charles Steuart, M.D., Senior Surgeon to the Belfast General Dispensary; Ormeau terrace, Belfast. *Council*, 1867. *Hon. Loc. Sec.*

1859 Cory, Frederick Charles, M.D., Portland villa, Buckhurst hill, Essex. *Council*, 1867-69. *Trans.* 1.

1875 Cory, Robert, M.D., Assistant Obstetric Physician to St. Thomas's Hospital; 73, Lambeth Palace road, S.E. *Council*, 1879-81, 1884-5. *Vice-Pres.* 1887. *Trans.* 1.

1886 Cox, Joshua John, M.D. Ed., 54, Gildabrook road, Eccles, Manchester.

1869 Cox, Richard, M.D. St. And., Theale, near Reading. *Trans.* 1.

Elected

1877 CRAWFORD, JAMES, L.K.Q.C.P.I., Ightham, Sevenoaks.

1882 CREASE, JAMES ROBERTSON, F.R.C.S. Ed., 2, Ogle Terrace, South Shields.

1881 CREASY, JAMES GIDEON, Rectory lodge, Brasted, Sevenoaks.

1883 CREMEN, PATRICK JOHN, M.D., 4, Camden place, Cork.

1876 CREW, JOHN, Higham Ferrers, Northamptonshire.

1881 CRONK, HERBERT GEORGE, M.B. Cantab., Repton, near Burton-on-Trent.

1869 CROSS, ROBERT SHACKLEFORD, Petersfield, Hants.

1886* CROSS, WILLIAM JOSEPH, M.B., Horsham, Victoria, Australia.

1875* CULLINGWORTH, CHARLES JAMES, M.D., M.R.C.P., Physician to St. Mary's Hospital, Manchester; Professor of Obstetrics and Gynæcology at the Owens College, Manchester; 260, Oxford road, Manchester. *Council*, 1883-5. *Vice-Pres.* 1886-7. *Trans.* 2. *Hon. Loc. Sec.*

1862 CUMBERBATCH, LAWRENCE TRENT, M.D., 25, Cadogan place, Belgrave square, S.W. *Council*, 1868-70. *Vice-Pres.* 1878.

1859 CURGENVEN, J. BRENDON, 11, Craven hill gardens, Bayswater, W. *Council*, 1870-72. *Trans.* 3.

1885 DAKIN, W. RADFORD, M.D., 57, Welbeck street, Cavendish square, W. *Trans.* 1.

1868 DALY, FREDERICK HENRY, M.D., 185, Amhurst road, Hackney Downs, N.E. *Council*, 1877-9. *Vice-Pres.* 1883-5. *Trans.* 2.

1882 DAMBRILL-DAVIES, WILLIAM R., 101, Piccadilly, Manchester; and Chelford, Cheshire.

1884 DARWIN, GEORGE HENRY, M.R.C.P., The Cedars, Albert park, Didsbury, near Manchester.

1883 DAVIDSON, CHARLES, M.D. St. And., 29, Cassland road, Hackney, E.

1876 DAVIES, GOMER, L.R.C.P. Ed., 9, Pembridge villas, Bayswater, W.

1884 DAVIES, JOHN, 91, New North road, N.

Elected

1885 Davies, William Morriston, M.D., 55, Gordon square, W.C.

1877 Davson, Smith Houston, M.D., Campden villa, 203, Maida vale, W.

1878 Day, Edmund Overman, Assistant Surgeon to the Royal Infirmary for Children and Women, Waterloo Bridge road; 78, Waterloo road, S.E.

1880 Day, William Hankes, Surgeon to the City Prisons, Norwich; 3, Surrey Street, Norwich. *Trans.* 1.

1859 Day, William Henry, M.D., Physician to the Samaritan Free Hospital for Women and Children; 10, Manchester square, W. *Council*, 1873-75. *Vice-Pres.* 1885-6.

1877 Dewar, John, L.R.C.P. Ed., 132, Sloane street, S.W.

1860 Dickenson, John, F.R.C.S., Hon. Surgeon to the Wrexham Infirmary; Wrexham, Denbighshire.

1885 D'Monte, Dominick A., M.D., Bandora, Bombay.

1887 Dodson, Arthur Edward, L.R.C.P. and L.M. Ed., Windermere villas, Earlsfield, Tooting, S.W.

1879 Dolan, Thomas Michael, M.D., Horton house, Halifax.

1886 Donald, Archibald, M.A., M.B. Edin., St. Mary's Hospital, Manchester.

1879 Doran, Alban H. G., F.R.C.S., Surgeon to Out-Patients, Samaritan Free Hospital; 9, Granville place, Portman square, W. *Council*, 1883-5. *Hon. Lib.* 1886-7. *Trans.* 6.

1880 Downes, Denis Sidney, L.K.Q.C.P. I., 55, Kentish town road, N.W.

1884 Doyle, E. A. Gaynes, L.R.C.P., Colonial Hospital, Port of Spain, Trinidad.

O.F. Drage, Charles, M.D., Hatfield, Herts. *Council*, 1861-4. *Trans.* 1.

1885 Drage, Lovell, The Small House, Hatfield.

1871 Drake-Brockman, Edward Forster, F.R.C.S., L.R.C.P. Lond., Surgeon-Major; Superintendent Eye Infirmary, Madras; Professor of Physiology and Ophthalmology, Madras Medical College. [*Per* Messrs. Richardson and Co., East India Army Agency, 13, Pall Mall, S.W.]

Elected

1884 Drake, Charles Henry, 204, Brixton hill, S.W.

1878 Dring, William Ernest, L.R.C.P. Ed., Buckhurst hill, Essex.

1884 Duke, John C., The Glen, Lewisham, S.E.

1886 Dukes, William Profit, L.R.C.P. Ed., 75, Brick lane, Spitalfields, E.

1883 Duncan, Alexander George, M.B., 25, Amhurst park, Stamford hill, N.E.

O.F. Duncan, James, M.B., 8, Henrietta street, Covent garden, W.C. *Council*, 1873-74.

1882 Duncan, William, M.D., Assistant Obstetric Physician to the Middlesex Hospital; 6, Harley street, W. *Council*, 1885-6. *Trans.* 1.

1882 Eady, George John, M.D., Roslin, Caterham Valley.

1871 Eastes, George, M.B., F.R.C.S., 69, Connaught street, Hyde park square, W. *Council*, 1878-80.

1883 Eccles, F. Richard, M.D., Examiner for the College of Physicians and Surgeons, Ontario; Professor of Physiology, Western University; 1, Ellwood place, Queen's avenue, London, Ontario, Canada.

1867 Edis, Arthur W., M.D., Obstetric Physician to, and Lecturer on Midwifery at, the Middlesex Hospital; 22, Wimpole street, W. *Council*, 1873-74. *Hon. Sec.* 1874-77. *Vice-Pres.* 1878-80. *Board Exam. Midwives*, 1878-9. *Trans.* 8.

1879 Elder, George, M.D., C.M., Surgeon to the Samaritan Hospital for Women, Nottingham; 17, Regent street, Nottingham. *Hon. Loc. Sec.*

1879 Elkington, Arthur Guy, Surgeon-Major, Grenadier Guards, 52, Gillingham street, Eccleston square, S.W. *Council*, 1886-7.

1878 Ellery, Richard, L.R.C.P. Ed., Plympton, Devon.

1873 Engelmann, George Julius, A.M., M.D., 3003, Locust street, St. Louis, Missouri, U.S.

1884 English, Thomas Johnston, M.D., 128, Fulham road, S.W.

Elected

1875 Ewart, John Henry, Eastney, Devonshire place, Eastbourne.

1875 Eyeley, Joseph Frederick, L.R.C.P. Lond., 5, Hill-park crescent, Plymouth. *Hon. Loc. Sec.*

1876 Farncombe, Richard, 40, Belgrave street, Balsall heath, Birmingham.

1869 Farquhar, William, M.D., Surgeon-Major, Madras Army, Ootacamund, Madras Presidency. [*Per* A. H. Wilson, London and Westminster Bank, 217, Strand, W.C.]

1861 Farr, Geo. F., L.R.C.P. Ed., Slade House, 175, Kennington road, S.E. *Council*, 1885.

1882 Farrar, Joseph, M.D., Calton House, Morecambe.

1881 Farrer, George Albert, Spring villa, Brighouse, Halifax.

1879 Fayrer, Sir Joseph, M.D., K.C.S.I., Hon. Physician to H.M. the Queen and to H.R.H. the Prince of Wales; Physician to H.R.H. the Duke of Edinburgh; President Medical Board, India Office; 53, Wimpole street, Cavendish square. *Council*, 1883.

1868 Fegan, Richard, M.D., Westcombe park, Blackheath, S.E.

1886 Fennell, David, L.K.Q.C.P.I., 517, Commercial road East, E.

1886 Fenton, Herbert Alfred Hill, M.D. Brussels, 1, Cumberland street, S.W.

1886 Fisher, Frederick Bazley, L.R.C.P. Lond., West Walk Dorchester.

1870 Fisher, John Moore, M.D., 6, Pryme street, Hull.

1882 Fitzgerald, Charles Egerton, M.D., West Terrace, Folkestone. *Hon. Loc. Sec.*

1884 Fitzgerald, James G., F.R.C.S. Ed., Arundel Lodge, Balham, S.W.

1878 Flint, Arthur, L.R.C.P., Westgate-on-Sea, Isle of Thanet.

1877* Fonmartin, Henry de, M.D., The Elms, Parkhurst, Isle of Wight.

1884 Ford, Alexander, L.R.C.P. Ed., Newtown park, Waterford.

Elected

1877* FORD, JAMES, M.D., Eltham, Kent.

1884 FORSTER, HARRY JOHN, 420, Old Kent road, S.E.

1884 FORSYTH, ALEXANDER, M.D., 12, Park place, Greenwich, S.E.

1884 FOURACRE, ROBERT PERRIMAN, 20, Tollington park, N.

1886 FOWLER, CHARLES OWEN, M.D., Parchmore road, Thornton Heath, S.W.

1865 FOWLER, JAMES, F.S.A., Hon. Surgeon to the Clayton Hospital and Wakefield General Dispensary; 13, South Parade, Wakefield. *Council*, 1872-4. *Hon. Loc. Sec.*

1875* FRASER, ANGUS, M.D., Physician and Lecturer on Clinical Medicine to the Aberdeen Royal Infirmary; 232, Union street, Aberdeen.

1886 FREELAND, ERNEST HARDING, L.R.C.P. Lond., 75, Broadhurst gardens, South Hampstead, N.W.

1886 FREEMAN, ERNEST CARRICK, L.R.C.P. Lond., 21, St. George's square, S.W.

1867 FREEMAN, HENRY W., 24, Circus, Bath.

1880 FRY, JOHN BLOUNT, Swindon, Wiltshire.

1883 FULLER, HENRY ROXBURGH, M.B. Cantab., 45, Curzon street, Mayfair, W. *Trans.* 1.

1886 FURNER, WILLOUGHBY, F.R.C.S., 2, Brunswick place, Brighton. *Hon. Loc. Sec.*

1874* GALABIN, ALFRED LEWIS, M.A., M.D., Obstetric Physician to, and Lecturer on Midwifery at, Guy's Hospital; 49, Wimpole street, Cavendish square, W. *Council*, 1876-78. *Hon. Lib.* 1879. *Hon. Sec.* 1880-3. *Vice-Pres.* 1884. *Treas.* 1885-7. *Trans.* 11.

1863 GALTON, JOHN H., M.D., Woodside, 39, Anerley road, Upper Norwood, S.E. *Council*, 1874-6.

1881 GANDY, WILLIAM, Hill Top, Gipsy hill, S.E.

1886 GARDE, HENRY CROKER, F.R.C.S. Edin., Maryborough, Queensland.

1887 GARDINER, BRUCE H. J., L.R.C.P. Ed., Gloucester House, Barry road, East Dulwich, S.E.

Elected

1879 GARDNER, JOHN TWINAME, 6, Hillsboro' terrace, Ilfracombe.

1872 GARDNER, WILLIAM, M.A., M.D., Professor of Gynæcology, McGill University; Gynæcologist to the Montreal General Hospital; 109, Union avenue, Montreal, Canada.

1863 GARMAN, HENRY VINCENT, Kent House, 6, Bow road, E.

1876 GARNER, JOHN, 52, New Hall street, Birmingham.

1873 GARTON, WILLIAM, M.D., F.R.C.S., Hardshaw street, St. Helen's, Lancashire.

1859 GERVIS, HENRY, M.D., F.R.C.P., Obstetric Physician to, and Lecturer on Obstetric Medicine at, St. Thomas's Hospital; 40, Harley street, Cavendish square. *Council*, 1864-66. *Hon. Sec.* 1867-70. *Vice-Pres.* 1871-3. *Treas.* 1878-81. *Pres.* 1883-4. *Trans.* 8.

1866 GERVIS, FREDERICK HEUDEBOURCK, 1, Fellows road, Haverstock hill, N.W. *Council*, 1877-9. *Trans.* 1.

1884 GIBB, CHARLES JOHN, M.D., Westgate House, Newcastle-on-Tyne.

1875 GIBBINGS, ALFRED THOMAS, M.D., 93, Richmond road, Dalston, N.E. *Council*, 1885-6.

1884 GIBBON, FREDERICK WILLIAM, 87, Hudson street, South Shields.

1883 GIBBONS, ROBERT ALEXANDER, M.D., Physician to the Grosvenor Hospital for Women and Children; 32, Cadogan place, S.W.

1874 GIBSON, JAMES EDWARD, Hillside, West Cowes, Isle of Wight.

1877 GIFFARD, DOUGLAS WILLIAM, 5, Pavilion Parade, Old Steyne, Brighton.

1869 GILL, WILLIAM, L.R.C.P. Lond., 11, Russell square, W.C.

1871 GODDARD, EUGENE, L.R.C.P. Lond., North Lynne, Highbury New Park, N. *Trans.* 1.

1876 GODFRAY, ALFRED CHARLES, M.B., St. Helier House, Jersey.

1871 GODSON, CLEMENT, M.D., C.M., Assistant Physician-Accoucheur to St. Bartholomew's Hospital; 9, Grosvenor street, W. *Council*, 1876-77. *Hon. Sec.* 1878-81. *Vice-Pres.* 1882-4. *Board Exam. Midwives*, 1877, 1882-86. *Trans.* 5.

Elected

1868 Godwin, Ashton, M.D., 28, Brompton crescent, Brompton, S.W.

1873 Goldsmith, John, M.D., Highworth House, Worthing Sussex.

1873 Goodchild, Nathaniel, L.R.C.P. Ed., Sidney House, Highgate road, N.W.

1883 Gordon, John, M.D., 10, Amersham road, New Cross, S.E.

1869 Goss, Tregenna Biddulph, 1, The Circus, Bath. *Hon. Loc. Sec.*

1884 Gowans, William, F.R.C.S. Ed., 1, Victoria terrace, South Shields.

1885 Grant, Ogilvie, M.D., Queen Mary's House, Inverness.

1875 Gray, James, M.D., 15, Newton terrace, Glasgow.

1884 Greene, Walter, L.R.C.P. Lond., Wallingford.

1887 Greenwood, Edwin Climson, L.R.C.P., 19, St. John's wood park, N.W.

1863 Griffith, G. de Gorrequer, 34, St. George's square, S.W. *Trans.* 2.

1869 Griffith, John T., M.D., Talfourd House, Camberwell, S.E. *Council*, 1884-6.

1879 Griffith Walter Spencer Anderson, M.B. Cantab., F.R.C.S., M.R.C.P., Tutor in Obstetrics and Gynæcology at St. Bartholomew's Hospital; 114, Harley street, W. *Council*, 1886-7. *Board Exam. Midwives*, 1887. *Trans.* 2.

1880 Griffiths, Griffith, Bryncelyn, Pontardawe, Swansea Valley.

1870 Grigg, William Chapman, M.D., Physician to the Inpatients, Queen Charlotte's Lying-in Hospital; Assistant Obstetric Physician to the Westminster Hospital; 27, Curzon street, Mayfair. *Council*, 1875-77. *Board Exam. Midwives*, 1878-79.

O.F. Grimsdale, Thos. F., L.R.C.P. Ed., Consulting Surgeon to the Lying-in Hospital; 29, Rodney street, Liverpool. *Council*, 1861-62. *Vice-Pres.* 1875-76.

Elected

1882 GRIPPER, WALTER, M.B. Cantab., Featherstone villa, Wallington, Surrey.

1880 GROGONO, WALTER ATKINS, Berwick House, Broadway, Stratford, E.

1879 GROVE, WILLIAM RICHARD, M.D., St. Ives, Huntingdonshire.

1885 GRÜN, EDWARD FERDINAND, 2, Lower Richmond road, Putney, S.W.

1886 GUILDING, LANSDOWN MURRAY, M.A., M.B. Oxon., 16, Forbury, Reading.

1867 HADAWAY, JAMES, L.R.C.P. Ed., Dent-de-Lion Villa, Garlinge, near Margate.

1876 HADDEN, JOHN, M.D., 31, West street, Horncastle, Lincolnshire.

1881 HAIR, JAMES, M.D., Westgate, Peterborough.

1859 HALL, FREDERICK, 1, Jermyn street, St. James's, S.W.

1871 HALLOWES, FREDERICK B., Redhill, Reigate, Surrey. *Council*, 1885-6.

1880 HAMES, GEORGE HENRY, F.R.C.S., 2, Queensborough terrace, W.

1880 HAMILTON, THOMAS, M.D., Melrose House, 129, Green lanes, Stoke Newington, N.

1883 HANDFIELD-JONES, MONTAGU, M.D. Lond., M.R.C.P., Lecturer on Midwifery at, and Physician Accoucheur in charge of Out-patients to, St. Mary's Hospital; 24, Montagu square, W. *Council*, 1887.

1860 HARDEY, KEY, Surgeon to the West City Dispensary; 4, Wardrobe place, Doctors' Commons, E.C.

1886 HARDY, HENRY L. P., Holly Lodge, Richmond road, Kingston-on-Thames.

1877 HARPER, GERALD S., 5, Hertford street, May Fair, W.

1878 HARRIES, THOMAS DAVIES, F.R.C.S., Grosvenor House, Aberystwith, Cardiganshire.

O.F. HARRINSON, ISAAC, F.R.C.S., Castle street, Reading, Berks. *Council*, 1862-65. *Hon. Loc. Sec.*

1872 HARRIS, HENRY, M.D., F.R.C.S., Trengweath place, Redruth, Cornwall.

Elected

1867 HARRIS, WILLIAM H., M.D., 78, Oxford gardens, W.

1861 HARRIS, WILLIAM JOHN, Church House, Heene, Worthing. *Hon. Loc. Sec.*

1880 HARRISON, RICHARD CHARLTON, 13, Sandringham gardens, Ealing, W.

1886 HARTLEY, HORACE, L.R.C.P. and S. Ed., 122, Coldharbour lane, S.E.

1886 HARTLEY, REGINALD, L.R.C.P. and S. Ed., Kirkgate House, Thirsk.

1880 HARVEY, JOHN STEPHENSON, 69, Rue Faidherbe, Boulogne-sur-Mer, France.

1865 HARVEY, ROBERT, M.D., 52, Chowringhee, Calcutta. [Per Messrs. Cochran and Macpherson, 152, Union street, Aberdeen.] *Trans.* 1. *Hon. Loc. Sec.*

1886 HARVEY, SIDNEY FRED., L.R.C.P. Lond., 42, Perham road, West Kensington, W.

1887 HAW, WALTER HERBERT, B.A., the Dispensary, Portland Town, N.W.

1865 HAYES, HAWKESLEY ROCHE, Basingstoke, Hants.

1873 HAYES, THOMAS CRAWFORD, M.D., Assistant Obstetric Physician to King's College Hospital; 17, Clarges street, Piccadilly, W. *Council*, 1876-78.

1880 HEATH, WILLIAM LENTON, M.B., 88A, Cromwell road, Queen's gate, S.W. *Trans.* 1.

1867 HEMBROUGH, JOHN WILLIAM, Ivy cottage, Waltham, Grimsby.

1881 HEPBURN, WILLIAM ALEX., Rosslyn House, Coxhoe, Co. Durham.

1876 HERMAN, GEORGE ERNEST, M.B., F.R.C.P., Obstetric Physician to, and Lecturer on Midwifery at, the London Hospital; 20, Harley street, Cavendish square, W. *Council*, 1878-79. *Hon. Lib.* 1880-1. *Hon. Sec.* 1882-5. *Vice-Pres.* 1886-7. *Board Exam. Midwives*, 1886-87. *Trans.* 10.

Elected

O.F. HEWITT, GRAILY, M.D., F.R.C.P., Professor of Midwifery in University College, London, and Obstetric Physician to University College Hospital; 36, Berkeley square, W. *Hon. Sec.* 1859-64. *Treas.* 1865-66. *Vice-Pres.* 1867-68. *Pres.* 1869-70. *Trans.* 21.

1860 HICKS, JOHN BRAXTON, M.D., F.R.C.P., F.R.S., Consulting Obstetric Physician to Guy's Hospital; 24, George street, Hanover square. *Council*, 1861-2, 1869. *Hon. Sec.* 1863-65. *Vice-Pres.* 1866-68. *Treas.* 1870. *Pres.* 1871-2. *Trans.* 36.

1860 HIGGS, THOMAS FREDERIC, M.D., Beaconsfield House, Dudley, Worcestershire.

1886 HOAR, CHARLES, M.B., C.M. Aber., Bantony House, Hurst Green, Hawkhurst (Railway Station Robertsbridge).

1886 HODGES, HERBERT CHAMNEY, L.R.C.P. Lond., Watton, Herts.

O.F. HODGES, RICHARD, M.D., F.R.C.S., 36, Harewood Square, N.W. *Trans.* 3.

1864 HOFFMEISTER, Sir WILLIAM CARTER, M.D., Surgeon to the Queen in the Isle of Wight; Clifton House, Cowes, Isle of Wight. *Council*, 1877-9. *Hon. Loc. Sec.*

1886 HOLBERTON, HENRY NELSON, L.R.C.P. Lond., East Molesey.

1875 HOLLINGS, EDWIN, M.D., 4, Gordon street, Gordon square, W.C.

1886 HOLLOWAY, WILLIAM GEORGE, B.A., M.B. Cantab., Apsley Villa, St. John's, S.E.

1859 HOLMAN, CONSTANTINE, M.D., The Barons, Reigate, Surrey. *Council*, 1867-69. *Vice-Pres.* 1870-71.

1880 HONIBALL, OSCAR DUNSCOMBE, M.D., George Town, Demerara, British Guiana.

1864 HOOD, WHARTON PETER, M.D., 11, Seymour street, Portman square, W.

1872 HOPE, WILLIAM, M.D., Physician to Queen Charlotte's Lying-in Hospital; 56, Curzon street, Mayfair, W. *Council*, 1877-9. *Board Exam. Midwives*, 1873-4.

Elected

1884 HOPKINS, JOHN, L.R.C.P. Ed., 93, Camberwell road, S.E.

1883* HORROCKS, PETER, M.D., M.R.C.P. Lond., Assistant Obstetric Physician to, and Demonstrator of Practical Obstetrics at, Guy's Hospital; 9, St. Thomas's street, S.E. *Council*, 1886-7. *Trans.* 1.

1876 HORSMAN, GODFREY CHARLES, 22, King street, Portman square, W.

1883 HOSKIN, THEOPHILUS, L.R.C.P. Lond., 186, Amhurst road, N.E.

1883 HOUCHIN, EDMUND KING, L.R.C.P. Ed., 23, High street, Stepney, E.

1884 HOUGH, CHARLES HENRY, Full street, Derby.

1877 HOWELL, HORACE SYDNEY, M.D., East Grove house, 18, Boundary road, St. John's Wood, N.W.

1879 HUBBARD, THOMAS WELLS, Lenham, Bromley, Kent.

1885 HUGHES, EDGAR A., L.R.C.P. Lond., 91, Onslow gardens, S.W.

1882 HUNT, JOSEPH WILLIAM, M.D. B.S., 101, Queen's road, Dalston, E.

1883 HURFORD, CHARLES, L.R.C.S.I., 258, Caledonian road, N.

1884* HURRY, JAMIESON BOYD, M.D. Cantab., 43, Castle street, Reading. *Council*, 1887. *Trans.* 1.

1878 HUSBAND, WALTER EDWARD, 56, Bury New Road, Manchester.

1859 HUTCHINSON, JONATHAN, F.R.C.S., LL.D., F.R.S., Consulting Surgeon to the London Hospital; 15, Cavendish square, W. *Council*, 1869-71. *Vice-Pres.* 1881-3. *Trans.* 1.

1886 HUTTON, JOHN STUART, L.R.C.P. Lond., St. Thomas's Hospital, S.E.

1882 HUTTON, ROBERT JAMES, L.R.C.P. Ed., Stapleton House, Stapleton Hall road, Finsbury Park, N.

1884 INGLE, ROBERT NICHOLS, M.D., University Lecturer on Midwifery, 21, Regent street, Cambridge. *Council*, 1887. *Hon. Loc. Sec.*

Elected

1884 Inglis, James, King street, Newcastle, New South Wales.

1879 Inkson, James, M.D., Brigade-Surgeon, Army Medical Department, General Hospital, Calcutta.

1883 Inman, Robert Edward, 243, Hackney road, E.

1884 Irwin, John Arthur, M.A., M.D., 427, Fifth avenue, New York.

1864 Jackson, Edward, M.B., 69, Osborne Road, Jesmond, New castle-on-Tyne.

1887 Jackson, G. E. Cowie, F.R.C.S. Ed., 17, Poland street, W.

1883 Jackson, George Henry, Lansdowne House, Tottenham.

1884 Jackson, James, 14, Huntingdon street, Barnsbury, N.

1864 Jackson, Robert, M.D., 53, Notting hill square, W. *Council*, 1885.

1886 Jacomb-Hood, Charles John, L.R.C.P., King's College Hospital, W.C.

1883 Jakins, Percy S., 9, Osnaburgh street, Regent's park, N.W.

1873 Jakins, William Vosper, L.R.C.P. Ed., 165, Collins street East, Melbourne.

1872 Jalland, Robert, Horncastle, Lincolnshire. *Trans.* 1.

1878 James, Walter Culver, M.D., M.C., 11, Marloes road, Kensington, W.

1877 Jamieson, Patrick, M.A., 3, St. Peter's street, Peterhead, Aberdeenshire.

1885 Jamieson, Robert Alexander, M.D., Shanghai. [Per Messrs. Henry S. King and Co., 65, Cornhill, E.C.]

1886 Jamison, Arthur Andrew, M.D. Glas., St. Helen's, Lancashire.

1883* Jenkins, Edward Johnstone, M.B. Oxon., Australian Club, Sydney (per H. K. Lewis, 136, Gower street, W. C.).

1877 Jenks, Edward W., M.D., 84, Lafayette avenue, Detroit, Michigan, U.S.

1882 Jennings, Charles Egerton, F.R.C.S. Eng., Assistant Surgeon to the North-West London Hospital; 15, Upper Brook street, Grosvenor square, W.

Elected

1883 Johnson, Arthur Jukes, M.B., Bloor street west, Toronto, Ontario, Canada.

1877 Johnson, Samuel, M.D., 5, Hill street, Stoke-upon-Trent.

1881 Johnston, Joseph, M.D., 24, St. John's Wood Park, N.W.

1879 Johnston, Wm. Beech, M.D., 157, Jamaica road, Bermondsey, S.E.

1868 Jones, Evan, Ty-Mawr, Aberdare, Glamorganshire. *Council*, 1886-7. *Hon. Loc. Sec.*

1878 Jones, H. Macnaughton, M.D., F.R.C.S.I. and Edin., 141, Harley street, Cavendish square, W.

1881 Jones, James Robert, M.B., Box, 320, Winnipeg, Manitoba, Canada.

1868 Jones, John, 60, King street, Regent street, W.

1876 Jones, Leslie, M.D., C.M., Limefield House, Cheetham Hill, Manchester.

1886 Jones, Lewis, M.D., Balham, S.W.

1885 Jones, P. Sydney, M.D., 16, College street, Hyde Park, Sydney. (Per Messrs. D. Jones & Co., 1, Gresham Buildings, Basinghall street, E.C.)

1873 Jones, Philip W., Silver street, Enfield.

1883 Jones, W. H. Fenton, M.D., 29, Brook street, Grosvenor square, W.

1886 Jones, William Owen, The Downs, Bowden, Manchester.

1879 Joubert, Charles Henry, M.D. [Care of Comptoir d'Escompte de Paris, Calcutta.]

1878 Judson, Thomas Robert, L.R.C.P. Lond., Hayman's Green, West Derby, Liverpool.

1875 Jukes, Augustus, M.B., N. W. Mounted Police, Regina, N. W. Territory, Canada.

1878 Kane, Nathaniel H. K., M.D., Lanherne, Kingston hill, Surrey.

1884 Keates, William Cooper, L.R.C.P., 2, Tredegar villas, East Dulwich road, S.E.

1880 Kebbell, Alfred, Flaxton, York.

Elected

O.F. KEELE, GEORGE THOMAS, 81, St. Paul's road, Highbury, N. *Council*, 1885.

1883 KEELING, JAMES HURD, M.D., 267, Glossop road, Sheffield. *Hon. Loc. Sec.*

1874 KEMPSTER, WILLIAM HENRY, L.R.C.P. Ed., Oak House, Bridge road, Battersea, S.W.

1886 KENNEDY, ALFRED EDMUND, L.R.C.P. Ed., Chesterton House, Plaistow, E.

1879 KER, HUGH RICHARD, L.R.C.P. Ed., Townsend House, Hales-Owen.

1865* KERNOT, GEORGE CHARLES, 9, Elphinstone road, Hastings,

1883 KERR, J. KING, M.D., Leytonstone, E.

1872 KERR, NORMAN S., M.D., F.L.S., 42, Grove road, Regent's park, N.W.

1877* KERSWILL, JOHN BEDFORD, M.R.C.P. Ed., Fairfield, St. German's, Cornwall.

1878 KHORY, RUSTONJEE NASERWANJEE, M.D. Brussels, L.Med. Bombay, Physician to the Parell Dispensary, Bombay; Girgaum road, Bombay.

O.F. KIALLMARK, HENRY WALTER, 5, Pembridge gardens, Bayswater. *Council*, 1879-80.

1860 KINGSFORD, EDWARD, F.R.C.S., Surgeon to the Sunbury Dispensary; Sunbury-on-Thames.

1862 KIRKPATRICK, JOHN RUTHERFORD, M.D. Dub., King's Professor of Midwifery, Dublin University; 4, Upper Merrion street, Dublin. *Council*, 1872-4.

1872* KISCH, ALBERT, 3, Sutherland gardens, Maida vale, W.

1867 KNAGGS, HENRY GUARD, M.D., 189, Camden road, N.W.

1884 KNAPTON, GEORGE, L.R.C.P. Ed., Portswood, Southampton.

1876 KNOTT, CHARLES, M.R.C.P. Ed., Liz Ville, Elm grove, Southsea.

1881 LACY, CHARLES SETHWARD DE LACY, M.B., 31, Grosvenor street, W.

1885 LANE, JAMES OSWALD, B.A., M.D. Cantab., Northampton.

Elected

1867 Langford, Charles P., Sunnyside, Hornsey lane, N.

1883 Langley, Aaron, L.R.C.P. Ed., 149, Walworth road, S.E.

1886 Lankester, Herbert Henry, M.B. Lond., 1, Elm park gardens, South Kensington, W.

1872 Lattey, James, 23, St. Mary Abbott's terrace, Kensington, W.

1886 Lauder, William, M.D. Edin., 174, Oxford road, Manchester.

1875 Lawrence, Alfred Edward Aust, M.D., Physician-Accoucheur to the Bristol General Hospital; 15, Richmond hill, Clifton, Bristol. *Council*, 1885-86. *Hon. Loc. Sec.*

1878 Leachman, Albert Warren, M.D., Fairley, Petersfield, Hants.

1884 Leadam, William Ward, M.D., 80, Gloucester terrace, Hyde park, W.

1884 Lediard, Henry Ambrose, M.D., 43, Lowther street, Carlisle. *Trans.* 1.

1887 Lees, Edwin Leonard, M.B., C.M. Ed., Hospital for Women and Children, Bristol.

1860 Leishman, William, M.D., Physician to the University Lying-in Hospital, Regius Professor of Midwifery in the University of Glasgow; 11, Woodside crescent, Glasgow. *Council*, 1866-68. *Vice-Pres.* 1869-70. *Trans.* 1.

1882 Leonard, Henry James, M.B., 279, Camden road, N.W.

1881 Le Page, John Fisher, L.R.C.P. Ed., 17, The Crescent, Salford, Manchester.

1885 Lewers, Arthur H. N., M.D. Lond., M.R.C.P., Assistant Obstetric Physician to the London Hospital; 60, Wimpole street, W. *Council*, 1887. *Trans.* 1.

1877 Lewis, John Riggs Miller, M.D., Deputy-Surgeon General, Markham Lodge, Liverpool road, Kingston hill, Surrey.

1885 Lidiard, Sydney Robert, L.R.C.P. Ed., 11, Charlotte street, Hull.

1875 Liebman, Carlo, M.D. Vienna, Principal Surgeon, Trieste Civil Hospital, Trieste, Austria. *Trans.* 1.

Elected

1874 LITHGOW, ROBERT ALEXANDER DOUGLAS, M.R.C.P. Ed., 27A, Lowndes street, Belgrave square, S.W.

1868 LLEWELLYN, EVAN, L.R.C.P. Ed., 9, Mount place, London Hospital, E.

1872* LOCK, JOHN GRIFFITH, M.A., Lansdowne House, Tenby.

1859 LOMBE, THOMAS ROBERT, M.D., Bemerton, Torquay.

1862 LOWE, GEORGE, F.R.C.S., 5, Horninglow street, Burton-on-Trent, Staffordshire. *Council*, 1887. *Trans.* 1. *Hon. Loc. Sec.*

1873 LUSH, WILLIAM JOHN HENRY, F.R.C.P.Ed., Associate of King's College, London; Fyfield House, Andover.

1878* LYCETT, JOHN ALLAN, M.D., The "Hollies," Graiseley, Wolverhampton.

1871 MCCALLUM, DUNCAN CAMPBELL, M.D., Professor of Midwifery and Diseases of Women and Children, McGill University; 45, Union avenue, Montreal, Canada. *Trans.* 4.

1884 MCCARTHY, GEORGE FRANCIS, L.K.Q.C.P., 138, Westminster Bridge road, S.E.

1879 MACKEOUGH, GEORGE J., M.D., Chatham, Ontario, Canada.

O.F. MACKINDER, DRAPER, M.D., Consulting-Surgeon to the Gainsborough Dispensary; Gainsborough, Lincolnshire. *Council*, 1871-3. *Trans.* 2.

1879 MACLAURIN, HENRY NORMAND, M.D., 155, Macquarie street, Sydney, New South Wales.

1886 MCMULLEN, WILLIAM, L.K.Q.C.P.I., 319A, Brixton road, S.W.

1859 MADGE, HENRY M., M.D., 4, Upper Wimpole street, W. *Council*, 1863-65, 1884. *Vice-Pres.* 1872-4. *Trans.* 15.

1884 MALCOLM, JOHN D., M.B., C.M., 24, Bryanston street, W.

1871 MALINS, EDWARD, M.D., Obstetric Physician to the General Hospital, Birmingham; 8, Old square, Birmingham. *Council*, 1881-3. *Vice-Pres.* 1884-6. *Hon. Loc. Sec.*

Elected

1876 MANBY, FREDERICK EDWARD, 10, King street, Wolverhampton.

1868 MARCH, HENRY COLLEY, M.D., 2, West street, Rochdale.

1887 MARK, LEONARD P., L.R.C.P. Lond., 18, Earl's Court gardens, W.

1860 MARLEY, HENRY FREDERICK, The Nook, Padstow, Cornwall.

1862 MARRIOTT, ROBERT BUCHANAN, Swaffham, Norfolk.

1873 MARTIN, HENRY CHARRINGTON, M.B., C.M., 11, Somers place, Hyde park, W.

1877 MASON, SAMUEL BUTLER, L.R.C.P. Ed., Denham House, Pontypool, Monmouthshire.

1884 MASSEY, HUGH HOLLAND, 2, North terrace, Camberwell, S.E.

1884 MASTERS, JOHN ALFRED, L.R.C.P. Lond., Westall House, Brook green, W.

1886 MATTHEY, ARTHUR, L.R.C.P. Ed., The General Hospital, Croydon.

1887 MAUGHAN, JAMES, L.R.C.P. Lond., 56, Albany street, Regent's park, N.W.

1877 MAUNSELL, H. WIDENHAM, A.M., M.D., Pitt and London street, Dunedin, New Zealand.

1883 MAURICE, OLIVER CALLEY, 75, London street, Reading.

1877 MAY, LEWIS JAMES, Bountis Thorne, Seven Sisters road, Finsbury Park, N.

1884 MAYNARD, EDWARD CHARLES, L.R.C.P. Ed., 32, Sandgate road, Folkestone.

1885 MELLER, CHARLES BOOTH, L.R.C.P. Ed., Cowbridge, Glamorganshire.

1886 MENNELL, ZEBULON, 31, Shepherd's Bush road, W.

1882 MEREDITH, WILLIAM APPLETON, M.B., C.M., Surgeon to the Samaritan Free Hospital for Women and Children; 6, Queen Anne street, Cavendish square, W. *Council*, 1886-7.

1883 MIDDLEMIST, ROBERT PERCY, L.R.C.P. Lond., 6, Devonport street, Hyde park, W.

Elected

1875* Miles, Abijah J., M.D., Professor of Diseases of Women and Children in the Cincinnati College of Medicine, Cincinnati, Ohio, U.S.

1876 Millman, Thomas, M.D., Asylum for the Insane, Kingston, Ontario, Canada.

1880 Mills, Robert James, M.B., M.C., All Saints' Green, Norwich.

1886 Milner, Samuel George, L.R.C.P. Ed., Hillside, Dulwich road, Norwood, S.E.

1876 Milson, Richard Henry, M.D., 88, Finchley road, South Hampstead, N.W.

1869 Minns, Pembroke R. J. B., M.D., Thetford, Norfolk.

1867 Mitchell, Robert Nathal, M.D., Chester House, Wickham road, Brockley, S.E.

1884 Mitra, Asutosh, L.R.C.P.Ed., Kashmir, *vid* Sealkote, India.

1868 Moothoosawmy, P. S., M.D., F.L.S., Tanjore, Madras Presidency. *Trans.* 1.

1877 Moon, Frederick, M.B., Bexley house, Greenwich.

1873 Moon, Robert Henry, F.R.C.S., Fern Lodge, Lower Norwood.

1859 Moorhead, John, M.D., Surgeon to the Weymouth Infirmary and Dispensary; Weymouth, Dorset.

1883 Morris, Clarke Kelly, Gordon Lodge, Charlton road, Blackheath, S.E.

1886 Morton, Shadforth, M.D. Durham, Wellesley Villas, Croydon.

1887 Moseley, George Wilkins, M.B., C.M. Ed., Royal Hospital for Children and Women, Waterloo road, S.E.

1879 Moullin, James A. Mansell, M.A., M.B., Assistant Physician to the Hospital for Women and Children, 69, Wimpole street, Cavendish square, W. *Trans.* 1.

1878 Mowat, George, 49, St. Peter street, St. Albans. *Trans.* 1.

1877 Murphy, James, M.D., Honorary Surgeon to the General Infirmary, Sunderland; Holly House, Sunderland. *Hon. Loc. Sec. Trans.* 1.

Elected

O.F. MURRAY, GUSTAVUS CHARLES P., M.D., Obstetric Physician to the Great Northern Hospital; 66, Great Cumberland place, Hyde park, W. *Council*, 1864-65. 1883-5. *Hon. Sec.* 1866-69. *Vice-Pres.* 1870-72. *Treas.* 1873-77. *Trans.* 3.

1885 MURRAY, CHARLES STORMONT, L.R.C.S. and L.M., Ed., 34, Gloucester place, Portman square, W.

1887 MURRAY, HORACE H. C., 470, Hornsey road, N.

O.F. MUSGRAVE, JOHNSON THOMAS, L.R.C.P. Ed., Irlam villa, 39, Finchley road, N.W. *Council*, 1859-60. *Trans.* 1.

1863 NASON, JOHN JAMES, M.B. Lond., 11, Bridge street, Stratford-on-Avon.

1859 NEAL, JAMES, M.D., Barcelona House, Sandown, Isle of Wight.

1882 NESHAM, THOMAS CARGILL, M.D., Lecturer in Midwifery in the University of Durham College of Medicine at Newcastle-on-Tyne; 12, Ellison place, Newcastle-on-Tyne.

1881 NETHERCLIFT, WILLIAM HENRY, Junior Athenæum Club, Piccadilly, W.

1876 NEWHAM, JAMES, 16, Princes street, Cavendish square, W.

1859 NEWMAN, WILLIAM, M.D., Surgeon to the Stamford and Rutland Infirmary; Barn Hill House, Stamford, Lincolnshire. *Council*, 1873-75. *Vice-Pres.* 1876-77 *Trans.* 4.

1883 NEWSHOLME, ARTHUR, M.D., 39, High street, Clapham, S.W.

1873 NICHOLSON, ARTHUR, M.B. Lond., 98, Montpellier road, Brighton.

1879 NICHOLSON, EMILIUS ROWLEY, M.D., 89, Camden road, N.W.

1876 NIX, EDWARD JAMES, M.D., 143, Great Portland street, W.

1882 NORMAN, JOHN EDWARD, Lismore House, Hebburn-on-Tyne.

1883 NUNN, PHILIP W. G., L.R.C.P. Lond., Christchurch road, Bournemouth.

1884 OAKES, ARTHUR, M.D., 99, Priory road, West Hampstead, N.W.

Elected

1880 OAKLEY, JOHN, Holly House, Wood's End, Halifax, Yorkshire.

1886 OGLE, ARTHUR WESLEY, L.R.C.P. Lond., Middlesex Hospital, W.

1876 OGSTON, FRANCIS, M.D., Lecturer on Hygiene and Medical Jurisprudence in the University of Otago; Dunedin, New Zealand.

O.F. OLDHAM, HENRY, M.D., F.R.C.P., Consulting Obstetric Physician to Guy's Hospital; 4, Cavendish place, Cavendish square, W. *Vice-Pres.* 1859. *Council*, 1860, 1865-66. *Treas.* 1861-62. *Pres.* 1863-64. *Trans.* 1. *Trustee.*

1886 O'MEARA, FREDERICK, A. T., L.R.C.P., King's College Hospital, W.C.

1884 OPENSHAW, THOMAS HORROCKS, M.B., London Hospital, E.

1869 ORD, GEORGE RICE, Streatham hill, Surrey. *Council* 1881.

1880 ORTON, CHARLES, M.D., Nelson place, Newcastle-under-Lyme, Staffordshire.

1877 OSTERLOH, PAUL RUDOLPH, M.D. Leipzic; Dresden.

1863 OSWALD, JAMES WADDELL JEFFRIES, M.D., 245, Kennington road, S.E. *Trans.* 4.

1884 OSWALD, ROBERT JAMES WILLIAM, L.R.C.P., 212, Clapham road, S.W.

1883 PALMER, JOHN IRWIN, Warwick lodge, Kingston-on-Thames.

1877 PALMER, MONTAGU H. C., London road, Newbury, Berks.

1886 PAPILLON, THOMAS ALEXANDER, L.R.C.P. Ed., Burley road, Oakham.

1877* PARAMORE, RICHARD, M.D., 18, Hunter street, Brunswick square, W.C.

1867 PARKS, JOHN, Bank House, Manchester road, Bury, Lancashire.

1887 PARSONS, JOHN INGLIS, M.D. Dur., 9, Collingham place, S.W.

1880 PARSONS, SIDNEY, 78, Kensington park road, W.

1865* PATERSON, JAMES, M.D., Hayburn Bank, Partick, Glasgow.

Elected

1874 PAYNE, WILLIAM S. HELE, 54, Queen's Road, Peckham, S.E.

1882* PEACEY, WILLIAM, M.B., 214, Lewisham high road, S.E.

1864 PEARSON, DAVID RITCHIE, M.D., 23, Upper Phillimore place, Kensington, W.

1871 PEDLER, GEORGE HENRY, 6, Trevor terrace, Rutland gate, S.W.

1880 PEDLEY, THOMAS FRANKLIN, M.D., Rangoon, India.

1881 PENNY, GEORGE TOWN, B.A., Stanley House, Oakfield road, Upper Tollington Park, N.

1881 PERIGAL, ARTHUR, M.D., New Barnet, Herts.

1871 PERRIGO, JAMES, M.D., 163, Bleury street, Montreal, Canada. *Hon. Loc. Sec.*

1879* PESIKAKA, HORMASJI DOSABHAI, 23, Hornby row, Bombay.

1883 PETTIFER, EDMUND HENRY, 29, Stoke Newington green, N.

1879 PHIBBS, ROBERT FEATHERSTONE, L.R.C.P. Ed., Pelham House, 30, Sutherland gardens, Maida vale, W.

1879 PHILLIPS, GEORGE RICHARD TURNER, 24, Leinster square, Bayswater, W.

1882 PHILLIPS, JOHN, B.A., M.B., M.R.C.P., Physician to the British Lying-in Hospital; 125, Harley street, W. *Council*, 1887. *Trans.* 1.

1878 PHILPOT, JOSEPH HENRY, M.D., 13, South Eaton place, S.W.

1871 PHILPS, PHILIP GEORGE, 4, Queen's road, Peckham, S.E.

1876 PICARD, P. KIRKPATRICK, M.D., 59, Abbey road, St. John's Wood, N.W.

1874 PIGG, THOMAS, M.D., M.R.C.P., Physician to the Manchester Southern Hospital for Women and Children; 98, Mosley street, Manchester.

1866 PILCHER, WILLIAM JOHN, 43, High street, Boston, Lincolnshire.

Elected

1864 PLAYFAIR, W. S., M.D., LL.D., F.R.C.P., Physician Accoucheur to H.I. & R.H. the Duchess of Edinburgh; Professor of Obstetric Medicine in King's College, and Obstetric Physician to King's College Hospital; 31, George street, Hanover Square, W. *Council*, 1867. 1883-5. *Hon. Librarian*, 1868-9. *Hon. Sec.* 1870-72. *Vice-Pres.* 1873-5. *Pres.* 1879-80. *Trans.* 14.

1880 POCOCK, FREDERICK ERNEST, M.D., The Limes, St. Mark's road, Notting hill, W.

1883 POCOCK, WALTER, Broadlands, Effra road, Brixton, S.W.

O.F.* POLLARD, WILLIAM, Surgeon to the Torbay Hospital; Southlands, Torquay, Devon.

1883 POOK, WILLIAM JOHN, L.R.C.P., 2, Hemingford road, N.

1877 POOLE, S. WORDSWORTH, M.D., Dunedin, Sidcup, Kent. *Trans.* 1.

1876 POPE, H. CAMPBELL, M.D., F.R.C.S., Broomsgrove Villa, 280, Goldhawk road, Shepherd's Bush, W.

1882 PORTER, JOSEPH FRANCIS, M.D., 1, Bow road, E.

1864 POTTER, JOHN BAPTISTE, M.D., F.R.C.P., Obstetric Physician to, and Lecturer on Midwifery and Diseases of Women at, the Westminster Hospital; 20, George street, Hanover square, W. *Council*, 1872-6. *Hon. Lib.* 1877-8. *Vice-Pres.* 1879-81. *Treas.* 1882-4. *Board Exam. Midwives*, 1883-4. *Pres.* 1885-6. *Trans.* 1.

1875 POWDRELL, JOHN, 160, Euston road, N.W.

1884 POWELL, JOHN JAMES, L.R.C.P. Lond., Blyton House, Weybridge.

1863 POWELL, JOSIAH T., M.D., 347, City road, E.C.

1885 PRAEGER, EMIL ARNOLD, Victoria, British Columbia.

1886 PRANGLEY, HENRY JOHN, L.R.C.P. Lond., 160, Anerley road, Anerley.

1864 PRICE, WILLIAM NICHOLSON, Lecturer on Midwifery and the Diseases of Women and Children at the Leeds School of Medicine; Mount Pleasant, Leeds. *Council*, 1876-8.

Elected

1880 PRICKETT, MARMADUKE, M.A. Cantab., M.D., Physician to the Samaritan Hospital; 12, Devonport street, Gloucester square, W.

O.F. PRIESTLEY, WILLIAM O., M.D., LL.D., F.R.C.P., Consulting Obstetric Physician to King's College Hospital; 17, Hertford street, Mayfair, W. *Council*, 1859-61, 1865-66. *Vice-Pres.* 1867-69. *Pres.* 1875-76. *Trans.* 6.

1884 PRONGER, CHARLES ERNEST, L.R.C.P., Litchdon, Barnstaple.

1886 PULLIN, FRANK BINGLEY, L.R.C.P.

1876 QUIRKE, JOSEPH, L.R.C.P. Ed., The Oaklands, Hunter's lane, Handsworth, Birmingham.

O.F. RANDALL, JOHN, M.D., Lecturer on Medical Jurisprudence, St. Mary's Hospital Medical School; Medical Officer, St. Marylebone Infirmary; 204, Adelaide road, N.W. *Council*, 1877.

1861 RASCH, ADOLPHUS A. F., M.D., Physician for Diseases of Women to the German Hospital; 7, South street, Finsbury square, E.C. *Council*, 1871-3. *Trans.* 5.

1878 RAWLINGS, JOHN ADAMS, M.R.C.P. Ed., 4, Northampton terrace, Swansea.

1870 RAY, EDWARD REYNOLDS, Dulwich, Kent, S.E.

1860* RAYNER, JOHN, M.D., Swaledale House, Quadrant road north, Highbury New Park, N.

1879 READ, THOMAS LAURENCE, 11, Petersham terrace, Queen's gate, S.W.

1874 REES, WILLIAM, Priory House, 129, Queen's crescent, Haverstock hill, N.W.

1879 REID, WILLIAM LOUDON, M.D., 7, Royal crescent, Glasgow.

1886 RENSHAW, HERBERT SMITH, M.D. St. And., Salebridge house, Sale, Manchester.

1875* REY, EUGENIO, M.D., 39, Via Cavour, Turin.

1886 RICH, ARTHUR CRESSWELL, M.D. Lond., 67, Catherine street, Liverpool.

1862 RICHARDS, DAVID, Llangeitho, Cardiganshire. *Trans.* 1.

Elected

1862 RICHARDS, S. SMITH C., 36, Bedford square, W.C.

1886 RICHARDSON, THOMAS ARTHUR, 26, London road, Croydon.

1872 RICHARDSON, WILLIAM L., M.D., A.M., Professor of Obstetrics in Harvard University; 225, Commonwealth avenue, Boston, Massachusetts, U.S.

1872 RIGDEN, GEORGE, Surgeon to the Canterbury Dispensary; 60, Burgate street, Canterbury. *Trans.* 1. *Hon. Loc. Sec.*

1871 RIGDEN, WALTER, 16, Thurloe place, S.W. *Council*, 1882-3. *Trans.* 1.

O.F.* ROBERTS, DAVID LLOYD, M.D., F.R.C.P., F.R.S. Edin., Obstetric Physician to the Manchester Royal Infirmary; and Lecturer on Clinical Midwifery and the Diseases of Women in Owens College; 11, St. John street, Deansgate, Manchester. *Council*, 1868-70, 1880-2. *Vice-Pres.* 1871-2. *Trans.* 5. *Hon. Loc. Sec.*

1867 ROBERTS, DAVID W., M.D., 56, Manchester street, Manchester square, W.

1883 ROBERTS, JOHN CORYTON, L.R.C.P. Ed., Avenue House, Peckham Rye, S.E.

1874 ROBERTSON, WILLIAM BORWICK, M.D., St. Anne's, Thurlow park road, West Dulwich, S.E.

1884 ROBINSON, LUKE, M.R.C.P. Lond., 217, Geary street, San Francisco, California.

O.F. ROBINSON, THOMAS, M.D., 5, Woburn square, W.C.

1886 ROE, ARTHUR DUMVILLE, B.A., M.B. Cantab., West hill, Wandsworth, S.W.

1876 ROE, JOHN WITHINGTON, M.D., Ellesmere, Salop.

O.F. ROGERS, WILLIAM RICHARD, M.D., Consulting Physician to the Samaritan Free Hospital for Women and Children; 56, Berners street, Oxford street, W. *Council*, 1870-72. *Trans.* 4.

1874 ROOTS, WILLIAM HENRY, Canbury House, Kingston-on-Thames.

Elected

1874 ROPER, ARTHUR, Lewisham hill, Blackheath, S.E. *Council*, 1886-7.

1865 ROPER, GEORGE, M.D., Consulting Physician to the Royal Maternity Charity; 19, Ovington gardens, S.W. *Council*, 1875-77, 1883-5. *Vice-Pres.* 1879-81. *Board Exam. Midwives*, 1880-1, 1883-5. *Trans.* 10.

1859 ROSE, HENRY COOPER, M.D., Rosslyn hill, Hampstead, N.W. *Council*, 1875-77. *Trans.* 4.

1880 ROSS, DAVID PALMER, M.D., Freetown, Sierra Leone.

1883 ROSSER, WALTER, M.D., 1, Wellesley villas, Croydon.

1884 ROSSITER, GEORGE FREDERICK, M.B., Cairo Lodge, Weston-super-Mare.

1885 ROUGHTON, EDMUND WILKINSON, M.D., Nothguor House, Brook Green, W.

1884 ROUGHTON, WALTER, L.R.C.P. Lond., Station road, New Barnet.

1882 ROUTH, AMAND J. McC., M.D., B.S., Assistant Obstetric Physician, Charing Cross Hospital; 6, Upper Montagu street, W. *Council*, 1886-7. *Trans.* 1.

O.F. ROUTH, CHARLES HENRY FELIX, M.D., Consulting Physician to the Samaritan Free Hospital for Women and Children; 52, Montagu square, W. *Council*, 1859-61. *Vice-Pres* 1874-6. *Trans.* 13.

1881 ROWORTH, ALFRED THOMAS, Grays, Essex.

1886 RUSHWORTH, FRANK, M.B. Lond., Goldhurst terrace, South Hampstead, N.W.

1870 RUSSELL, LOGAN D. H., M.D., Government Park Estate, near Spanish Town, Jamaica (2, St. James's road, New Brighton).

1886 RUTHERFORD, HENRY TROTTER, B.A., M.B. Cantab., 46, Queen Anne street, Cavendish square, W.

1866 SABOIA, V., M.D., 34, Rua do Visconde Maranguape, Rio de Janeiro. *Trans.* 2.

1883 SALTER, FRANCIS JOSEPH, L.R.C.P. Ed., 9, Lyddon terrace, Leeds.

Elected

1864 SALTER, JOHN H., D'Arcy House, Tolleshunt D'Arcy, Kelvedon, Essex.

1875 SALZMANN, FREDERICK WILLIAM; Senior Surgeon to the Hospital for Women; 18, Montpellier road, Brighton. *Council*, 1880-2. *Hon. Loc. Sec.*

1868* SAMS, JOHN SUTTON, St. Peter's Lodge, Eltham road, Lee, S.E.

1886 SANDERSON, ROBERT, M.B. Oxon., 32, Montpellier road, Brighton.

1872 SANGSTER, CHARLES, 148, Lambeth road, S.E.

1870 SAUL, WILLIAM, M.D., 44, Bedford square, W.C.

1872 SAVAGE, THOMAS, M.D., Surgeon to the Birmingham and Midland Hospital for Women; 33, Newhall street, Birmingham. *Council*, 1878-80. *Hon. Loc. Sec.*

1877 SAVORY, CHARLES TOZER, M.D., 6, Douglas road, Canonbury, N. *Trans.* 1.

1886 SCOTT, BERNARD CHARLES, Eversley, Upper Lennard road, Penge, S.E.

O.F. SCOTT, JOHN, F.R.C.S., 10, Tavistock square, W.C. *Council*, 1868-70. *Vice-Pres.* 1871-3. *Trans.* 1.

1870 SCOTT, JOHN, M.D., New street, Sandwich.

1866 SEQUEIRA, JAMES SCOTT, 68, Leman street, Goodman's fields, E., and Crescent House, Cassland Crescent, Cassland road, South Hackney.

1882 SERJEANT, DAVID MAURICE, M.D., 1, The Terrace, Camberwell, S.E.

1875 SETON, DAVID ELPHINSTONE, M.D., 12, Thurloe place, South Kensington. *Council*, 1884.

1860 SEWELL, CHARLES BRODIE, M.D., 21, Cavendish square, W., and 13, Fenchurch street, E.C. *Council*, 1880-2.

O.F. SHARPIN, HENRY WILSON, F.R.C.S., Surgeon to the Bedford General Infirmary, Bedford. *Council*, 1871-3. *Trans.* 1. *Hon. Loc. Sec.*

1882 SHEARD, WILLIAM FRANCIS, L.R.C.P. Ed., 210, Upper Richmond road, Putney, S.W.

Elected

1867 SHEPHERD, FREDERICK, L.R.C.P. Ed., 33, King Henry's road, Primrose hill, N.W.

1886 SIMMONS, FOURNESS, M.B. Edin., 41, Catherine Street, Liverpool.

1874 SINCLAIR, ALEXANDER DOULL, M.D., Consulting Physician to the Boston Lying-in Hospital; 35, Newbury street, Boston, Massachusetts, U.S.

1876 SIRIGNANO, GIOSUE, M.D., 24, Strada Banchi Nuovi, Napoli.

1884 SLATER, DRUCE JOHN, M.B., 13, St. George's terrace, Gloucester road, S.W.

1879 SLIGHT, GEORGE, M.D., 3, Clifford street, Bond street, W.

1881 SLOAN, ARCHIBALD, M.B., 272, Bath street, Glasgow.

1876 SLOAN, SAMUEL, M.D., C.M., 1, Newton terrace, Glasgow.

1861 SLYMAN, WILLIAM DANIEL, 26, Caversham road, Kentish Town, N.W. *Council*, 1881.

1867 SMITH, HEYWOOD, M.D., 18, Harley street, Cavendish square, W. *Council*, 1872-5. *Board Exam. Midwives*, 1874-76. *Trans.* 6.

1875 SMITH, RICHARD THOMAS, M.D., Physician to the Hospital for Women, Soho square; 53, Haverstock hill, N.W.

1886 SMITH, SAMUEL PARSONS, L.K.Q.C.P.I., Park Hyrst, Addiscombe road, Croydon.

1882 SMITH, STEPHEN MABERLY, L.R.C.P. Ed., Yarra street, Geelong, Melbourne. [Per Henry M. Smith, 17, St. Bride street, Ludgate circus, E.C.]

1879 SMITH, WM. HUGH MONTGOMERY, L.R.C.P. Ed., 24, London road, West Croydon, Surrey.

1876 SNELL, EDMUND GEORGE CARRUTHERS, 102, Bonner road, Victoria park, E.

1882 SNELL, GEORGE, L.R.C.P. Ed., Fort Canje, Berbice, B. Guiana.

1868 SPAULL, BARNARD E., Lynwood House, 47, Hammersmith road.

1876 SPENCER, LIONEL DIXON, M.D., Bengal Army [care of Messrs. Grindlay and Co., 55, Parliament street].

Elected

1882 Spooner, Frederick Henry, M.D., Maitland Lodge, Clapton, E.

1876 Spurgin, Herbert Branwhite, 45, Abington road, Northampton.

1884 Stansby, Charles John, M.D., 10, Strand, Derby.

1884 Starkie, Richard Francis, M.D., 47, Sussex street, S.W.

1886 Steavenson, William Edward, M.D. Cantab., M.R.C.P., 39, Welbeck street, W.

1884 Stevenson, Edmond Sinclair, F.R.C.S. Ed., Strathallan House, Rondebosch, Cape of Good Hope.

1877 Stephenson, William, M.D., Professor of Midwifery, University of Aberdeen; 297, Union Street, Aberdeen. *Council*, 1881-3. *Vice-Pres.*, 1887. *Trans.* 1.

1886 Stewart, Edward, M.D. Brussels, 16, Harley street, W.

1873 Stewart, James, M.D., 2, Skinner street, Whitby, Yorkshire.

1875* Stewart, William, L.R.C.P. Ed., Highfield House, Barnsley, Yorkshire.

1876 Stewart, William Edward, F.R.C.S. Ed., 16, Harley Street, W.

1884 Stiven, Edward W. F., M.D., The Manor Lodge, Harrow.

1884 Stivens, Bertram H. Lyne, 37, Princes square, Hyde park, W.

1883 Stocks, Frederick, 421, Wandsworth road, S.W.

O.F. Stowers, Nowell, 125, Kennington park road, Kennington, S.E.

1866 Strange, William Heath, M.D., 2, Belsize avenue, Belsize park, N.W. *Council*, 1882-4.

1871 Sturges, Montague J., M.D., The Limes, Beckenham, Kent.

1884 Sunderland, Septimus, M.D., Chelsea Hospital for Women, Fulham road, S.W.

1886 Sutcliffe, Arthur Edwin, 345, Stretford Road, Manchester.

1883* Sutherland, Henry, M.A., M.D. Oxon., M.R.C.P., 6, Richmond terrace, Whitehall, S.W.

Elected

1862 SUTTON, FIELD FLOWERS, M.D., Balham hill, Clapham, S.W.

1859 SWAYNE, JOSEPH GRIFFITHS, M.D., Physician-Accoucheur to the Bristol General Hospital; Harewood House, 74, Pembroke road, Clifton, Bristol. *Council*, 1860-61, *Vice-Pres.* 1862-64. *Trans.* 8. *Hon. Loc. Sec.*

1883 TAIT, EDWARD SABINE, M.B., 54, Highbury park, N. *Trans.* 1.

1879 TAIT, EDWARD W., 54, Highbury park, N. *Council*, 1886-7.

1871 TAIT, LAWSON, F.R.C.S., Surgeon to the Birmingham and Midland Hospital for Women; 7, The Crescent, Birmingham. *Trans.* 12.

1880 TAKAKI, KANAHEIRO, F.R.C.S., 10, Nishi-Konyachō, Kiōbashika, Tokio, Japan. *Hon. Loc. Sec.*

1871 TANNER, JOHN, M.D., F.L.S., Physician for Diseases of Women, to the Farringdon General Dispensary; 19, Queen Anne street, Cavendish square, W.

1859 TAPSON, ALFRED JOSEPH, M.B. Lond., 36, Gloucester gardens, Westbourne terrace, W. *Council*, 1862-64.

1863 TAPSON, JOSEPH ALFRED, Surgeon to the Clapham General Dispensary; 83, High street, Clapham, S.W. *Trans.* 1.

1871 TAYLER, FRANCIS T., B.A. Lond., M.B., Claremont villa, 224, Lewisham high road, S.E.

O.F. TAYLOE, EDWARD, South lodge, Clapham common, S.W. *Council*, 1882.

1881 TAYLOR, F. PERLEY, F.R.C.S. Ed, Charlotte Town, Prince Edward Island, Canada.

1869 TAYLOR, JOHN, Earl's Colne, Halstead, Essex.

1871 TAYLOR, JOHN W., M.D., D.Sc., Rothsay House, Prince of Wales terrace, Scarborough. *Hon. Loc. Sec.*

1887 TAYLOR, THOMAS, 131A, Mile-end road, E.

1885 TAYLOR, WILLIAM CHARLES EVERLEY, M.R.C.P. Edin, 34, Queen street, Scarborough.

1872 TEMPLE, JAMES ALGERNON, M.D., Professor of Obstetrics, Trinity College; 191, Simcoe street, Toronto. *Hon. Loc. Sec.*

Elected

1862 THANE, GEORGE DANCER, M.D., 15, Montague street, Russell square, W.C. *Council*, 1881.

1884 THOMAS, GEORGE H. W., 79, New North road, N.

1882 THOMAS, HUGH, The Grange, Coventry road, Birmingham.

1867 THOMPSON, JOSEPH, L.R.C.P. Lond., 1, Oxford street, Nottingham. *Trans.* 1. *Hon. Loc. Sec.*

1878 THOMSON, DAVID, M.D., 37, Castle street, Luton, Bedfordshire.

1874 THOMSON, WILLIAM SINCLAIR, M.D., 40, Ladbroke grove, Kensington park gardens, W.

1860 THORNE, GEORGE LEWORTHY, M.B., Lenham, near Maidstone, Kent.

1879 THORNTON, J. KNOWSLEY, M.B., C.M., Surgeon to the Samaritan Free Hospital for Women and Children, 22, Portman street, Portman square. *Council*, 1882-3. *Hon. Lib.* 1884-5. *Hon. Sec.*, 1886. *Trans.* 6.

1867 THORNTON, WILLIAM HENRY, Surgeon to the Royal National Hospital for Scrofula; Berkeley Lodge, Margate.

1874 TICEHURST, AUGUSTUS ROWLAND, Silchester House, Pevensey road, St. Leonard's-on-Sea.

1873 TICEHURST, CHARLES SAGE, Petersfield, Hants.

1866 TILLEY, SAMUEL, The Cedars, Cranford, Middlesex.

O.F. TILT, EDWARD JOHN, M.D., Consulting Physician-Accoucheur to the Farringdon General Dispensary; 27, Seymour street, Portman square, W. *Council*, 1867-68. *Vice-Pres.* 1869-70. *Treas.* 1871-2. *Pres.* 1873-4. *Trans.* 7.

1883 TINKER, FREDERICK HOWARD, F.R.C.P. Ed., Brookland House, Hyde, Cheshire.

1879 TIVY, WILLIAM JAMES, F.R.C.S. Ed., 8, Lansdown place, Clifton, Bristol.

1872 TOLOTSCHINOFF, N., M.D., Charkoff, Russia.

1869 TOMKINS, CHARLES P., L.K.Q.C.P.I., Beddington park, Croydon.

Elected

1870 Towne, Alexander, 99, Rectory road, Stoke Newington, N.

1884 Travers, William, M.D., 2, Phillimore gardens, W.

1873 Trestrail, Henry Ernest, F.R.C.S., M.R.C P. Ed., Walmer House, Victoria road, Aldershot. *Trans.* 1.

1884 Troutbeck, James, M.B., 17, Cleveland square, Hyde park, W.

1886 Tuckett, Walter Reginald, 18, Daniel street, Bath.

1865 Turner, John Sidney, Stanton House, 81, Anerley road, Upper Norwood.

1881 Tuthill, Phineas Barrett, M.D., Royal Victoria Hospital, Netley, Southampton.

1861 Tweed, John James, Junr., F.R.C.S., 14, Upper Brook street, W.

1885 Underhill, Edgar T., M.B. Ed., Bromsgrove.

1874 Venn, Albert John, M.D., Obstetric Physician to the Metropolitan Free Hospital; 8, Upper Brook street, Grosvenor square, W.

1873 Verley, Reginald Louis, F.R.C.P. Ed., 28B, Devonshire street, Portland place, W.

1879 Wade, George Herbert, Ivy Lodge, Chislehurst, Kent.

1860 Wales, Thomas Garneys, Downham Market, Norfolk.

1883 Walker, Alexander, M.D., Hotham House, Putney, S.W.

1866 Walker, Thomas James, M.D., Surgeon to the General Infirmary, Peterborough; 33, Westgate, Peterborough. *Hon. Loc. Sec. Council*, 1878-80.

1870 Wallace, Frederick, 96, Cazenove road, Upper Clapton, N. *Council*, 1880-2.

1872* Wallace, John, M.D., Assistant-Physician to the Liverpool Lying-in Hospital; 1, Gambier terrace, Liverpool. *Hon. Loc. Sec. Council*, 1883-5.

1883 Wallace, Richard Unthank, M.B., Cravenhurst, Craven park, Stamford hill, N.

1885 Wallis, Frederick Charles, B.A., B.S. Cantab., Sydney, New South Wales.

Elected

1879* WALTER, WILLIAM, M.A., M.D., Surgeon to St. Mary's Hospital, Manchester; 20, St. John street, Manchester.

1867* WALTERS, JAMES HOPKINS, Senior Assistant Surgeon to the Royal Berkshire Hospital; 15, Friar street, Reading, Berks. *Council*, 1884-6. *Trans.* 1. *Hon. Loc. Sec.*

1873 WALTERS, JOHN, M.B., Church street, Reigate, Surrey.

1859 WARDEN, CHARLES, M.D., Hon. Surgeon to the Birmingham Lying-in Hospital; 31, Newhall street, Birmingham.

1886 WARE, GEORGE STEPHEN, L.R.C.P. Lond., Middlesex Hospital, W.

1862 WATKINS, CHARLES STEWART, 16, King William street, Strand, W.C.

1884 WATSON, PERCIVAL HUMBLE, L.R.C.P. Lond., 72, Jesmond road, Newcastle-on-Tyne.

1884 WAUGH, ALEXANDER, L.R.C.P. Lond., Midsomer-Norton, Bath.

1867 WEBB, FRED. E., 113, Maida vale, W.

O.F. WEBB, HENRY SPEAKMAN, Welwyn, Herts.

1886 WEBBER, WILLIAM W., L.R.C.P. Ed., Crewkerne.

1884 WEDMORE, ERNEST, M.B. Cantab., 23, Davies street, Berkeley square, W.

1876 WEIR, ARCHIBALD, M.D., St. Mungho's, Great Malvern.

1867 WELLER, GEORGE, The Mall, Wanstead, Essex.

1886 WELSFORD, GEORGE FRED., B.A., M.B. Cantab., Chaucer's house, Woodstock.

1876 WELLS, FRANK, M.D., Chapel Station, Brookline, Massachusetts.

O.F. WELLS, SIR T. SPENCER, Bart., F.R.C.S., Surgeon in Ordinary to H.M.'s Household; Consulting Surgeon to the Samaritan Free Hospital for Women and Children; 3, Upper Grosvenor street, W. *Council*, 1859. *Vice-Pres.* 1868-70. *Trans.* 5. *Trustee.*

Elected

1886 West, Charles J., L.R.C.P. Lond., Beaminster, Kempshott road, Streatham Common, S.W.

1886 Wharry, Robert, M.D. Aber., 6, Gordon square, W.C.

1876 Wharton, Henry Thornton, M.A. Oxford, 39, St. George's road, Kilburn, N.W.

1870 Wheatcroft, Samuel Hanson, L.R.C.P. Ed.

1860 Wheeler, Daniel, Chelmsford, Essex.

1887 Whitby, Robert, Harlesden, Willesden, N.W.

1873 White, Frederick Broad, 98, Portsdown road, Maida vale, W.

1882 Wholey, Thomas, L.R.C.P. Lond., London Hospital, E.

1883 Wicks, William Cairns, M.B., South view house, West parade, Newcastle-on-Tyne.

1887 Wigan, Charles Arthur, M.B. Dur., Portishead, Somerset.

1877 Wigmore, William, 130, Inverness terrace, Hyde park, W.

1883 Wilkinson, Thomas Marshall, F.R.C.S. Ed., 7, Lindum road, Lincoln.

1879 Willans, William Blundell, F.R.C.P. Ed., Much Hadham, Herts.

1879 Willett, Charles Verrall, 11, Edith road, West Kensington, W.

1872 Williams, John, M.D., F.R.C.P., Obstetric Physician to University College Hospital; 11, Queen Anne street, Cavendish square, W. *Council*, 1875-76. *Hon. Sec.* 1877-9. *Vice-Pres.* 1880-2. *Board Exam. Midwives*, 1881-2; *Chairman*, 1884-6. *Pres.* 1887. *Trans.* 11.

1886 Williams, Patrick Watson, M.B. Lond., The Royal Infirmary, Bristol.

1881 Willis, Julian, M.R.C.P. Ed., 82, Sutherland gardens, Maida vale, W.

1885 Wilson, Albert, M.D., Minto House, Fairlop road, Leytonstone, E.

Elected

1873 WILSON, JOHN HENRY, L.K.Q.C.P. Ireland, Obstetric Physician to the Ladies' Charity and Lying-in Hospital; Kensington Lodge, Kensington, Liverpool.

1860 WILSON, ROBERT JAMES, F.R.C.P. Ed., 7, Warrior square, St. Leonard's-on-Sea, Sussex. *Hon. Loc. Sec. Vice-Pres.* 1878-80.

1886 WINTERBOTTOM, ARTHUR THOMAS, L.R.C.P. Ed., Worsley road, Swinton, Manchester.

1877 WINTLE, HENRY, M.B., Kingsdown, Church road, Forest hill, S.E.

1887 WITHERS, ROBERT, Lawrence, Otago, New Zealand.

1880 WOODWARD, G. P. M., M.D., Sydney, New South Wales.

O.F. WORSHIP, J. LUCAS, Manor House, Riverhead, Sevenoaks, Kent. *Council*, 1875-77. *Vice-Pres.* 1883-5. *Trans.* 3.

1881 WORTHINGTON, GEORGE FINCH JENNINGS, M.K.Q.C.P., Highden, Sidcup.

1876 WORTS, EDWIN, 6, Trinity street, Colchester.

1887 WRIGHT, CHARLES JAMES, Surgeon to the Hospital for Women and Children, Leeds; Lecturer on Midwifery to the Yorkshire College; Lynton Villa, Virginia road, Leeds.

1886 WYNTER, WALTER ESSEX, F.R.C.S., Templecombe, Twickenham.

1871 YARROW, GEORGE EUGENE, M.D., 87, Old street, E.C. *Council*, 1881-3.

1885 YOUNG, ADAM, L.R.C.P. Lond., Sevenoaks.

1882 YOUNG, CHARLES GROVE, M.D., New Amsterdam, Berbice, British Guiana.

1861 YOUNG, WILLIAM BUTLER, 10, Castle street, Reading, Berks.

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ADVERTISEMENT.

THE SOCIETY is not as a body responsible for the facts and opinions which are advanced in the following papers and communications read, nor for those contained in the abstracts of the discussions which have occurred at the meetings during the Session.

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OBSTETRICAL SOCIETY

OF

LONDON.

SESSION 1886.

JANUARY 13TH, 1886.

J. B. POTTER, M.D., President, in the Chair.

Present—37 Fellows.

Books were presented by Dr. De-Cristoforis, Dr. Arthur J. Harries, Dr. J. Braxton Hicks, Dr. Sinclair Thomson, the Royal Medical and Chirurgical Society, and the Clinical Society of London.

The following gentlemen were elected Fellows of the Society:—Harvey K. Bradbury, M.R.C.S.; Willoughby Furner, F.R.C.S. (Brighton); Zebulon Mennell, M.R.C.S.; and Samuel George Milner, L.R.C.P. Ed. (Norwood).

The following gentlemen were proposed for election:—William Joseph Cross, M.B. Toronto, L.R.C.P. Ed. (Horsham, Victoria); and Lewis Jones, M.D. (Balham).

DR. HEYWOOD SMITH'S CONDUCT IN THE ARMSTRONG CASE.

The PRESIDENT announced that the Council, after careful and anxious consideration, had come to the con-

clusion that they were not justified in recommending the Society to put in force the law which provides for the removal of a Fellow. He then read the following resolution of Council:

"Having heard Dr. Heywood Smith's explanation of his conduct in the Armstrong case, it is resolved that the Council emphatically disapproves of his action in that case. That this resolution be read from the Chair at the next meeting of the Society."

CASE OF RUPTURE OF THE UTERUS.

By Lovell Drage, M.R.C.S.

Ellen M—, æt. 36; five children born alive. Labour commenced at 3 p.m. on January 1st, 1886. Had what the nurse called niggling pains till midnight; the pains were not such as to prevent her husband sleeping with her. Soon after midnight had a violent pain, and had no more pains subsequently. The clerk was sent for and arrived about 1.30 a.m. He found a small amount of external hæmorrhage; as this did not entirely cease, and there were no pains, he sent for me about 4 a.m., and I arrived at a little after the half hour.

I found the patient in a state of partial collapse with all the appearances of one who had lost a considerable amount of blood. There was from a pint to a pint and a half of blood in a chamber, and not much in the bed. *Per vaginam*, I found the placenta presenting; I separated this partly and introduced my hand into the uterus and turned, bringing down both legs. I then injected some ether into the buttock and gradually withdrew the child; the operation taking about twenty minutes. After the birth of the child I removed the placenta with my hand and, on making a further attempt to examine the cavity of

the uterus, with a view of removing any pieces of membrane, &c., which might have remained behind, I found my hand was no longer in the cavity of the uterus, but in that of the abdomen. I withdrew my hand and sent off for Dr. Godson, Assistant Physician Accoucheur to the hospital, and in the meantime injected more ether, removed the pillows from under patient's head, and did what I could to keep her alive. She died about half an hour after the removal of the placenta. The position of the child was back to the left; head in left iliac fossa.

The patient had an enormously pendulous belly, and, on my arriving, no uterine wall could be felt distinctly.

She had not had difficult labours before (in fact they had been precipitate), but had told her husband the day before her death that she was quite sure her labour would not be straight, and that there was something unusual.

Vomiting had been a prominent feature throughout the pregnancy, but had been more so since the commencement of labour.

Post-mortem.—Sp. Il. 9½, Cr. Il. 11½, Ext. conjugate 7½, Int. conjugate at least 4 inches. A roomy pelvis. A large amount of blood and clot found in peritoneal cavity, probably about one quart and a half. The ring of Bandl particularly well marked. Insertion of the placenta was partly involved in the rupture. The membranes were studded with small hæmorrhages, and remained for the most part attached. A rupture on the left side extending from one inch below the external os in the vagina to a point just below the insertion of the round ligament was found. It involved the placental site in part. Much blood was found effused underneath the peritoneum, between it and the uterine wall. The corpus luteum small and situated in the right ovary.

Dr. HERMAN thought the specimen showed the ring of Bandl very plainly; not so clearly as diagrams (which were probably exaggerated for the sake of clearness), but clearly enough to leave no doubt of its existence.

Dr. CHAMPNEYS said that he was unable to see any ring of Bandl. He asked Mr. Drage to point it out in the specimen.

Dr. W. GRIFFITH had examined the specimen the day after the post-mortem. At that time the ring of Bandl was well marked, and was situated exactly three inches above the external os. There was no abrupt edge of the retracted portion of the uterus, but a rapid tapering off for the space of an inch, from a thickness of one inch above to rather less than half an inch below. He had also endeavoured to determine the relation of the ring to the internal os, but had not positively succeeded; his opinion was, however, that the ring was above the internal os.

Dr. HORROCKS asked if any attempt had been made to stop the hæmorrhage.

Mr. DRAGE, after examining the specimen, said that it had much changed since the autopsy, and that he could not now see the ring of Bandl.

CANCER (?) OF BODY OF UTERUS REMOVED BY ENUCLEATION.

By Dr. GALABIN.

DR. GALABIN showed a microscopic section of a tumour of the body of the uterus removed by enucleation. The patient was thirty-four years old, and was sent from Wales to Guy's Hospital. The case had been diagnosed as one of fibroid tumour of the uterus. She was suffering from almost continuous metrorrhagia. The uterus was found to be enlarged nearly up to the level of the umbilicus, and a smooth mass could be felt presenting at the os uteri, which was somewhat dilated.

After dilatation of the cervix, the lower portion of an intra-uterine tumour, bilobed and smooth on the surface, could be felt. It had a broad attachment to the uterine wall. It was thought that this was a fibroid tumour of the uterus, and it was decided to attempt enucleation. This was commenced with Thomas's serrated scoop, and continued with the fingers. Before the operation had proceeded far, Dr. Galabin found that the tumour had not the

firm and tough texture of a fibroid, but was soft. The hæmorrhage also was very profuse. He came to the conclusion that it must be a malignant growth, but, as it appeared to be separating from the wall of the uterus, he proceeded with the operation. The mass removed was somewhat larger than the fist, and the uterus afterwards contracted up to a size not much greater than the normal one. The patient had no further recurrence of hæmorrhage while she remained in the hospital.

The tissue of the tumour was uniform, and had the naked-eye appearances of cancer. It was soft, and a copious milky juice could be scraped from the cut section. From the fact that it appeared to be encapsuled, Dr. Galabin at first supposed that it might be a fibroid tumour which had undergone malignant degeneration. Microscopic examination did not, however, appear to confirm this. Dr. Galabin regarded it as being cylindroid or adenoid cancer. The tissue was composed of exuberantly proliferating glands of very irregular shapes. These for the most part were lined with a tolerably regular gland-epithelium. At a few points only it was seen that the epithelium had grown into rounded masses, projecting into the cavity of the gland, or that there were clusters in the stroma of similar epithelium-like cells, not showing any glandular lumen. The stroma between the glands contained elongated cells with large nuclei, which appeared to be involuntary muscular fibres, but there were no large muscular fibres like those generally seen in fibroids of the uterus.

Dr. W. Griffith stated that Mr. Eve had some time ago mentioned to him having found glandular structures lined with cylindrical epithelium in a fibroid he was examining at the College of Surgeons, which he did not think malignant.

ON THE PRODUCTION OF THE SHAPE OF THE OBLIQUE PELVIS OF NAEGELE.

By G. Ernest Herman, M.B. Lond., F.R.C.P.,
OBSTETRIC PHYSICIAN TO THE LONDON HOSPITAL AND LECTURER ON MIDWIFERY.

The problem.—The oblique pelvis of Naegele offers two problems for discussion: (1) The cause of the change in the sacro-iliac joint which characterises this pelvis; and (2) the reason why that change in the joint is associated with the peculiar shape of the pelvis.

Nature of morbid change.—I have no contribution to offer towards the solution of the first of these problems. I find no evidence as to the cause or production of this change in the joint, but only speculation. But, as the view which is taken of the production of the shape of the pelvis must to some extent depend upon what is thought to be the nature of the disease upon which that shape depends, I shall first state, without argument, what I think as to the joint disease, and then come to what is the object of the paper, viz. the explanation of the peculiar shape of the pelvis.

If we met with a condition similar to that present in the pelvis which Naegele described, and known to have started in disease during life, I think we should infer that there had been caries, by which the surfaces of bone, both iliac and sacral, forming the joint, had been diseased; that the lateral masses of the sacrum had been arrested in their growth, from destruction of the ossifying cartilages or ossific nuclei; and then that healing of the caries had produced ankylosis of the bones. There are specimens which show that such a process, occurring after

birth, may produce these changes in the articulation.* Therefore I think it not unreasonable to suppose that in the cases of Naegele pelvis in which the subject is stated never to have suffered from any illness, such a process may have taken place in utero. I do not think it profitable or necessary to discuss, as Thomas* has done, whether the dwarfing or the ankylosis be the primary change, whether the bone or the synovial membrane be first affected, because we have no evidence on these points, and they are immaterial from the present point of view, for we have to deal with the accomplished changes as a whole.

I now come to consider how these changes, the ankylosis and the dwarfing, produce the definite and characteristic shape of pelvis which we know that they do.

Duncan's explanation.—The only explanation that I am aware of is that given by Matthews Duncan,† and adopted by most writers on the subject. This theory, as I understand it, is as follows: that the normal bending of the os innominatum is due to the sacro-iliac ligaments pulling the posterior end of the ilium inwards and downwards, while the femora push the anterior part of the iliac beam inwards; the bone being bent round the sacrum as round a fulcrum or pivot. The appended diagram (Figure 1)

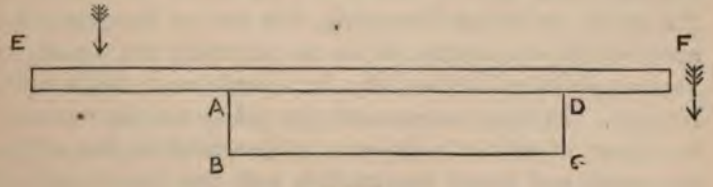


FIG. 1.

represents, in the crudest and simplest way, what, according to this theory, is the action of these forces.

Let A B C D represent the sacrum, and E F the iliac beam.

* Thomas, 'Das schräg verengte Becken,' Leyden, 1861; also Champneys, 'Obst. Trans.,' vol. xxiv, p. 191.

† 'Researches in Obstetrics,' p. 130.

E F is connected loosely enough with A D to allow of a certain amount of movement. Then the forces which act in the direction indicated by the arrows, bend the beam E F around the mass A B C D. Then, it is assumed, when the beam E F, instead of being so united to A B C D as to admit of some amount of movement, is blended with it, this action ceases. Now I cannot see how the action of the forces in bending the beam between E A and D F is altered according to whether the part applied to A D is capable of slight movement on A D, or is joined to it.

For this reason, irrespective of any other, this theory does not seem to me to meet the case. There are other objections to it, to which I shall subsequently refer.

I shall now explain what I believe to be the mode in which the shape of this pelvis is produced.

How the shape of pelvis is produced.—In the production of the shape of the pelvis there are obviously three main factors at work: (1) The body weight. (2) The action of muscles and ligaments. (3) The innate tendency of bones in their growth to assume a particular shape.

Relative importance of body weight and muscular action.—The greater part of the weight of the trunk is transmitted by the sacrum, through the ilia, to the acetabula. Except under effort of an exceptional kind the muscles attached to the pelvic bones do not do more than move the trunk, or incline the pelvis, this way or that, upon the acetabulum as a centre, so as to maintain the trunk, in various positions of the body, in a position of stable equilibrium. In these movements the pelvis may be regarded as a lever, of which the fulcrum is the acetabula, the weight the trunk and upper extremities, and the power applied at the insertion into the pelvis of the muscles which move the trunk. The force exerted by the muscles to move this weight about the fulcrum, to the extent required to keep the trunk in equilibrium, cannot be so much as the pressure on the fulcrum. It is true that during exceptional efforts the muscles may exert a force very much greater than the body weight; but such efforts are only

occasional, and are brief in proportion to their power, while the pressure of the body weight is continual. Therefore I think it evident that the action of muscles and ligaments, though undoubtedly capable of producing an effect upon the shape of the pelvis, is not at all comparable, as regards its power in this respect, to the body weight.

Innate force of bone growth.—It appears to me that the greatest of these three forces, one which is hardly enough remembered, is the innate power of the bones in their growth to assume a particular shape. The long bones of the legs grow into their shape in direct opposition to the pressure of the body weight on them. Even when they have been softened by rickets, and have yielded to pressure and become bent, their power of growth may, after the disease has passed off, make them grow into their right shape again.* It is obvious that on any hypothesis whatever of the action of the different pressures and tractions in the pelvis, it is far from being of the shape it would have were it moulded simply by the mechanical forces which are exerted upon it. We cannot explain this tendency, but nevertheless it appears to me to be the chief agent in producing the shape of the bones.

Naegele pelvic deformity a simple one.—The problem of the shape of the Naegele pelvis is a comparatively simple one, because in it the bones retain this power of resisting pressure. In the rickety, and in the osteo-malacic pelvis, the bones are softened by disease, and their power of assuming and maintaining their proper shape, in opposition to mechanical influences, is impaired. This difference is a very important one, and should make us cautious in drawing inferences as to the reason of the shape of a pelvis with healthy bones, from the shape of one in which the bones are abnormally pliable.

Blood supply.—There are other influences which in a minor degree modify the shape of the pelvis. Among these is vascular supply. Knowing how, in chronic

* See Marsh, 'St. Bartholomew's Hospital Reports,' vol. xviii, 1882, p. 24.

periostitis lasting over years, the tibia has been found thickened and lengthened, we should expect that the pelvis, if developing under similar abnormal conditions, would be, in an essentially similar way, altered in size and shape. The effect of the opposite condition, deficient blood supply, is shown by a pelvis described by Dumas,* in which, after amputation of the femur high up, in the third year of life, after a severe burn, the whole side of the pelvis to which the amputated limb was attached was smaller than that which rested on the sound leg. I can see no explanation of this, except that the removal of the demand for blood to the lower limb of that side led to diminished supply to the remaining vessels belonging to the same arterial system. Kehrer has shown experimentally on animals that this change can be produced.

Use of limb.—If the action of muscles and ligaments play any large part in modifying the shape of the pelvis, we should expect that important changes in shape would follow the excessive use, or the non-use, of either limb. There is in the museum of St. Bartholomew's Hospital, a pelvis (No. 638) showing atrophy of one side as a result of chronic hip disease. I mention this to point out that if it be the fact, and if it be the case also that the development of the pelvis may be modified by variations in the vascular supply of the bones during growth, these are reasons for caution in drawing inferences from pelves deformed in consequence of inflammatory disease extending over many years of life, such, for instance, as the coxalgic pelvis.

Simplicity of Naegele pelvis.—The Naegele pelvis is especially interesting because it is one of the simplest of all pelvic deformities. In it we have nothing to do with alterations in the vascular supply, nor with differences due to non-use of one side, nor with abnormal flexibility of the bones.

Body weight.—The remaining force which has to be

* 'Bassin vicié par suite de l'amputation du femur dans le jeune age,' Montpellier, 1879.

considered is the body weight, chiefly borne by the sacrum, and transmitted by it through the ilia to the acetabula. We have therefore a downward pressure exerted by the sacrum, and an upward counter-pressure exerted on each innominate bone by its femur.

Counter-pressure of femora.—It is assumed in every monograph on the subject that I am acquainted with, and the hypothesis of Duncan above mentioned is based upon this assumption, that the pressure (strictly speaking counter-pressure) of the femora upon the innominate bones is inwards as well as upwards. But Dr. Champneys has shown* that this pressure really tends to press the acetabulum upwards and *outwards*, and not inwards, as is generally assumed. This discovery, for such it may be called, is of the first importance in enabling us to understand the production of pelvic deformities. I have convinced myself of the correctness of this view, first, by the study of Dr. Champneys's paper. Champneys writes as follows concerning the effect of the femoral pressure on unsymmetrical pelves.† "The weight falling on one side of the middle line practically diminishes the length of the iliac beam on that side, and increases it on the other. (*a*) This alters the equal balance of the 'couple of forces' on each side (which in a symmetrical pelvis drag the anterior pelvic arch, or, in other words, the symphysis pubis, each to its own side) and gives the advantage to the couple on the side on which the weight does *not* fall. The symphysis pubis is dragged over to the less weighted side, and this action increases rapidly. (*b*) Together with this rotation or dragging, the acetabulum of the over-weighted side comes more and more towards the middle line, or, in other words, moves round the anterior pelvic arch." It is upon this principle that I think the peculiar shape of the Naegele pelvis is to be explained, and I should hardly have thought it necessary to write upon its application at so great length, were it not that it appears from a subse-

* "On the Pressure of the Femora, &c.," 'Obst. Trans.,' vol. xxv, p. 70.

† Op. cit., p. 94.

quent passage in Dr. Champneys's paper as if his view of the formation of the Naegele pelvis were different from mine: for he says, "The two principal forms of contracted pelvis (scoliotic and Naegele pelvis) have more agreements than differences. The differences are probably due principally to the presence or absence of a sacro-iliac joint."

I am led to accept Dr. Champneys's view of the pressure of the femora, also, by experiment upon the dead body, both of the fœtus and the adult. I have divided the symphysis pubis, and the structures uniting the os innominatum to the sacrum and coccyx, and then pushed upwards the femora, keeping them closely parallel to one another. I found that such upward pressure, instead of pushing together the two pubic bones (as it should have done did the femora press inwards), pushed them further apart.* Freund† found that by pulling on the body of the fœtus, and at the same time on the legs, the pubic bones were approximated.

Thirdly, it appears to me that if by this view of the direction of the pressure of the femora we can explain in a satisfactory manner the origin of pelvic deformities, the congruity between the results which according to the theory ought to be produced, and those which actually are produced, is in itself a presumption in favour of the correctness of the theory.

Altered pressures the only important influence at work upon Naegele pelvis.—In considering how the shape of the Naegele pelvis is produced, the effect of these pressures is practically the only agency which we have to consider. The structure of the bones, and their power to grow in the right direction in opposition to mechanical influences, is normal. If there be any differences between the two sides in respect of vascular supply, or use of the limb, the difference is so slight as to be inappreciable. But the pressure of the body weight is differently distributed on the two sides.

* "On the Pressure of the Femora, &c.," 'Obst. Trans.,' vol. xxv, p. 70.

† 'Monats. für Geburtskunde,' Band xiii, 1859.

Lateral dwarfing both of ilium and sacrum the fundamental change.—The change which mechanically is fundamental in this pelvis is the destruction (produced, as it seems to me reasonable to think, by caries) of the ossific centres in the lateral masses of the sacrum, and of the adjoining auricular surface of the ilium. A glance at the Naegele pelvis will show that there is both dwarfing of the sacrum on the affected side and extensive destruction of the ilium adjoining the synchondrosis. In a model of a Naegele pelvis in my possession, the distance from the centre of the promontory to the junction between the sacrum and ilium is on the ankylosed side an inch, on the sound side $2\frac{3}{8}$ inches (see Fig. 6). In a healthy pelvis, and on the sound side of the Naegele pelvis, the highest part of the sacro-sciatic notch is about $1\frac{1}{4}$ inches in front of the sacro-iliac synchondrosis (see Fig. 2). On the diseased side of the Naegele pelvis, the highest part of the notch is where the ilium appears to join the sacrum (see Fig. 3). The outline of the notch in front of the apex is much the same on the two sides. The inch and a half of ilium which should bound the notch behind its apex has therefore been apparently destroyed by the disease. These changes, leading to deficient breadth of the affected side of the sacrum and of the affected ilium, bring the acetabulum considerably nearer to the middle line, that is, to the line of the body weight, than on the sound side.

Distribution of body weight.—When the skeleton is looked at from the side, in the erect position, it is seen that the body weight descends through the sacrum and iliac beams almost vertically on to the femora. In this plane there is no appreciable difference between the two sides.

When looked at from the front, the body weight is seen to be divided, and carried by the lateral mass of each ilium—the thickest and strongest part of the bone—on to its respective femur. It comes on to the head of each femur at an angle, as nearly as I can measure, of about 40 or 45 degrees from the perpendicular, in the normal

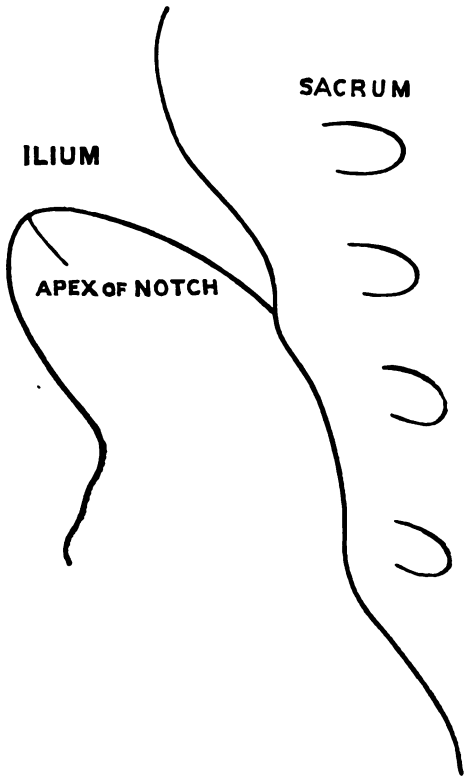


FIG. 2.—Normal pelvis.

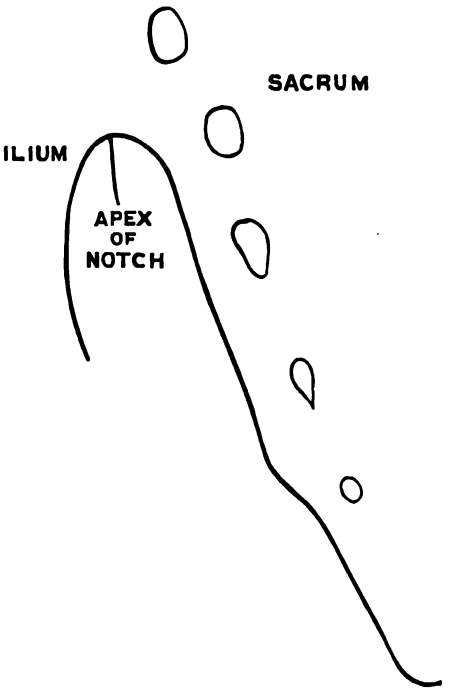


FIG. 3.—Naegele pelvis.

pelvis, this angle being, in such a pelvis, equal on the two sides.

Forces acting on pelvis of normal shape.—Considering the forces acting on the pelvis in the plane of the brim as being in equilibrium (as it is evident they must be), and neglecting the weight of the bones, and other minor forces, such as the actions of the structures attached to them, the mechanical arrangements may be represented by the following diagram (Fig. 4). The weight of the

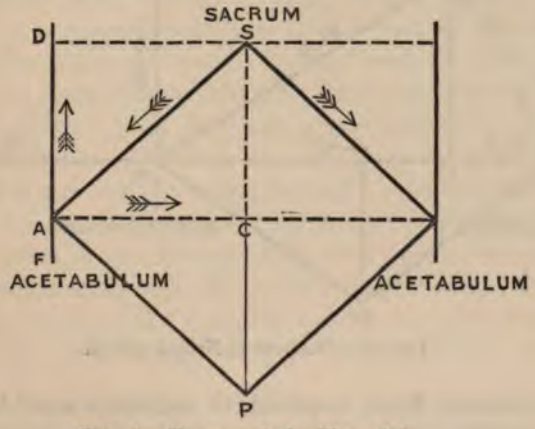


FIG. 4.—Pressures in healthy pelvis.

body falls upon the sacrum S, and is transmitted by the iliac beam S A to the acetabulum A. Here is applied the counter-pressure of the femur F, which tends to move S A upwards and outwards around S, and would divaricate the iliac beams from one another, were it not for the opposition of the pubic bones and their symphysis, A P, which form a tie beam, resisting the upward and outward movement of S A. At A therefore is applied the upward pressure of the femur A F, and the pull downwards and inwards exerted by A P. The resultant of these two forces must act along the line S A, in order to resist the force applied at S. The force A P may be resolved into two forces, one vertical, acting downwards, the other

horizontal, acting inwards; and if the downward vertical force be subtracted from the force A F, then (by the parallelogram of forces) the total vertical force upwards will be to the horizontal force inwards as A D to A C.

Difference between the two sides of the Naegele pelvis.—Applying this to the two sides of the Naegele pelvis (Fig. 5) it will be seen that on the side of the ankylosis

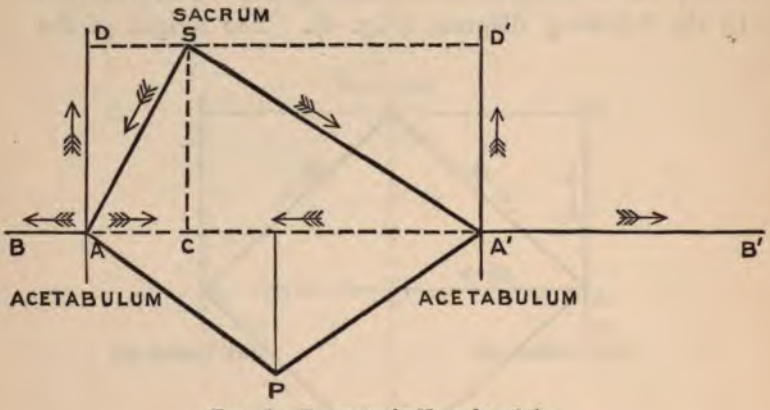


FIG. 5.—Pressures in Naegele pelvis.

the horizontal force required to maintain equilibrium is much less than the vertical pressure, while on the sound side it is much greater, A C representing the horizontal pull upon the tie beam on the ankylosed side, A′C that upon the sound side. The symphysis pubis is therefore pulled over towards the sound side.

The inward pull of the tie beam is opposed by a corresponding outward thrust of the beams A S, A′ S, and in Fig. 5 this outward thrust is shown by the lines A B, A′ B′.

In a model of the Naegele pelvis in my possession, the weight comes upon the femur of the ankylosed side at an angle of 18° or 20°, and on the sound side at one of 58° or 60°, from the perpendicular. In the diagram the upward pressure A D, A′ D′ is represented, for the sake of comparison, as equal on the two sides. Taking this as 100, the outward thrust of the iliac beam on the

ankylosed side A B will be represented by 37, that on the sound side A′ B′ by 158.

Effect of the difference.—The effect of this difference in the pressures to which the two ilia are subjected, will be that on the ankylosed side, from the increased upward pressure, there will be compression of the mass of bone through which that pressure passes, *i. e.* further compression of the ilium, already shortened by disease.* There will also be deficient carrying outwards of the acetabulum. On the sound side, the acetabulum will be carried outwards with increased power, and the part of the iliac beam transmitting the weight to the head of the femur will be less compressed; not only less compressed than on the ankylosed side, but less compressed than in the healthy pelvis.

Measurements showing this effect.—To ascertain whether this were so, I have measured from the sacro-iliac junction to a point in the ilio-pectineal line above the centre of the acetabulum, and from this latter point to the symphysis pubis, in the Naegele and in the normal pelvis respectively. The compression is evident to the eye in

* Mr. R. A. Herman, M.A., has supplied me with the following formula representing the compressive forces acting upon the two iliac beams:

Assuming the bones to be without weight and free from other attachments, then the bone A S is acted on by a crushing force (W = body weight).

$$= \frac{W}{A A'} \cdot \frac{A'C \,.\, A S}{S C}$$

and A′S by a force

$$= \frac{W}{A A'} \cdot \frac{A C \,.\, A'S}{S C}$$

Of these two the first is the greater if as in the figure A′S > A S.

For A′C . A S > A C . A′S,

if $(A'C)^2 \overline{A S|^2} > (A C)^2 \,.\, (A'S)^2$,

i.e. if $(A'C)^2 (\overline{A C|^2} + \overline{C S|^2}) > (A C)^2 (\overline{A'C|^2} + \overline{C S|^2})$,

i.e. if A′C > A C,

or if A′S > A S.

Taking the angles as in figure, the upward pressure at A would be ·82 W; at A′ ·45 W; the pressure tending to crush A S would be ·88 W., and to crush A′S would be ·35 W.; in A S and A′P the pressure is greater than in A S or A P.

the Naegele pelvis. The distance between the sacro-iliac junction and the point of the ilio-pectineal line above the middle of the acetabulum, on the ankylosed side, is, in a model in my possession, $1\frac{3}{4}$ inches; on the sound side $2\frac{3}{8}$ inches. The distance from the point in the ilio-pectineal line opposite the centre of the acetabulum to the symphysis pubis is on the ankylosed side 3 inches, on the sound side $2\frac{5}{8}$ inches. In the normal pelvis (taking a specimen in my possession) the distance between the sacro-iliac synchondrosis and a point in the ilio-pectineal line opposite the centre of the acetabulum is $2\frac{1}{8}$ inches; from the latter point to the pubic symphysis 3 inches. The proportion of the iliac to the pubic portion of the ilio-pectineal line is therefore, in the Naegele pelvis, on the ankylosed side, as 14 to 24, or 58 to 100; on the sound side as 19 to 21, or 90 to 100; in the normal pelvis as 17 to 24, or 71 to 100. These figures show that not only is there less vertical compression of the iliac beam on the sound side of the Naegele pelvis than on the ankylosed side, but also less than in the normal pelvis. The least thickness of the iliac beam between sacrum and acetabulum, in my model of Naegele pelvis, is, on the sound side $\frac{36}{48}$ inch, on the ankylosed side $\frac{45}{48}$ inch; additional evidence of compression. In the healthy pelvis $\frac{49}{48}$.

	Healthy pelvis.	Naegele pelvis, sound side.	Naegele pelvis, side of ankylosis.
Centre of sacrum to sacro-iliac junction	$2\frac{3}{8}$	$2\frac{3}{8}$	1
Apex of sciatic notch to sacro-iliac junction . . .	$1\frac{1}{2}$	$1\frac{1}{2}$	0
Sacro-iliac junction to ilio-pubic junction . . .	$2\frac{1}{8}$	$2\frac{3}{8}$	$1\frac{1}{4}$
Ilio-pubic junction to symphysis	3	$2\frac{5}{8}$	3
Proportion of iliac to pubic portion of ilio-pectineal line	17 to 24 or 71 to 100	19 to 21 or 90 to 100	14 to 24 or 58 to 100
Least thickness of iliac beam .	$\frac{49}{48}$	$\frac{36}{48}$	$\frac{45}{48}$

Beside the difference in the vertical pressure on the two sides of the Naegele pelvis, there is a difference in the outward pressure on the acetabulum; increased outward pressure on the sound side, diminished outward pressure

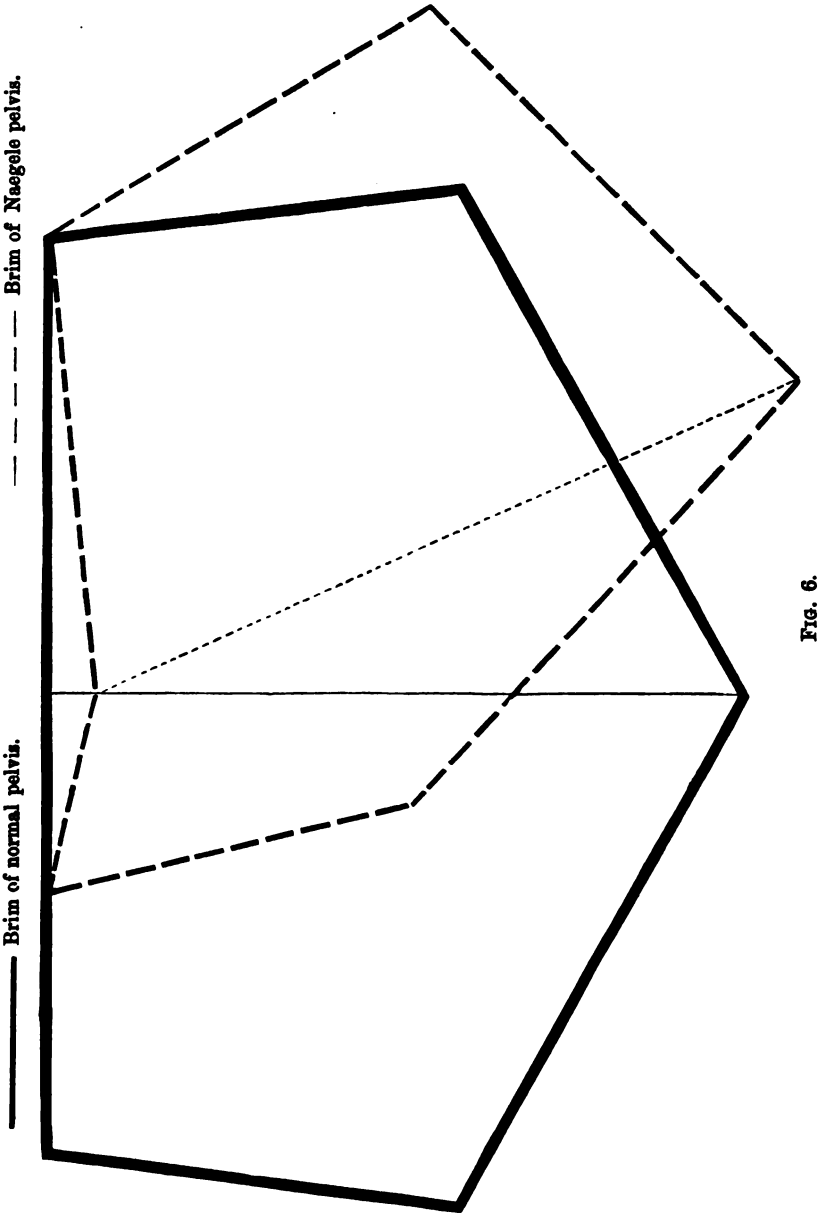


FIG. 6.

on the ankylosed side. The effect of this carrying outwards of the acetabulum on the sound side is that the curvature of the posterior part of the pelvic circle diminished on that side (see Fig. 6).

The only explanation that I can see of the greater length of the pubic part of the ilio-pectineal line on the side of the ankylosis, is that it is due to the action at each end of it of a force tending to produce elongation; the acetabulum (from the compression and partial destruction of the ilium and dwarfing of the side of the sacrum) drawing one end towards the posterior part of the pelvis, while the anterior end is pulled by the ligaments of the symphysis in the opposite direction, towards the sound side.

A complete exposition and proof of the cause of one pelvic deformity would mean nothing less than a full account of every other; for each one kind of pelvic deformity throws light on the rest. In the present paper I cannot attempt so large a task. But I may briefly mention some other pelvic deformities which support the views here advanced.

Support given to this view by the pelvis with unilateral atrophy.—One main postulate upon which the foregoing argument rests, is that the pressure of the femora is upwards and outwards. This view receives strong support from the pelvis described by Dumas, and already alluded to, in which deformity of the pelvis resulted from amputation of one leg high up, in early life. Here the bones were healthy. It is clear that whenever the pressure of the femur was so exerted as to modify the form of the pelvis, it would be quite unopposed. Now, the chief modification of the pelvis on the side of the remaining limb was the extent to which the ilium was carried outwards. In a well-shaped pelvis, says Dumas, the anterior superior iliac spine is distant about twelve centimetres from the median line; in this, on the side of the sound limb, it was fourteen centimetres. Although the iliac crest was longer on this side, yet the anterior superior iliac spine,

instead of being in front of that on the dwarfed side, was behind it. On the linea innominata on this side, there existed a marked elbow, situated at the extremity of the transverse diameter, the part in front of this elbow having a more pronounced curve than the part behind it; in this respect resembling the sound side in the pelvis of Naegele.

The pelvis already referred to, in the museum of St. Bartholomew's Hospital (No. 638), shows identical changes. Here the left side is atrophied from disuse. The left iliac crest is 222 millimetres long, the right 246. Therefore, were the pelvis otherwise unaltered in shape, the right anterior superior spine should be in front of the left. But the pressure of the right femur has been unopposed, and has carried the right ilium outwards and upwards. The right iliac spine is behind the left, and is 120 millimetres from the middle line, the left being only 98.

Duncan's arguments.—The explanation of the shape of the Naegele pelvis given in this paper takes the deficient breadth of the ilium and side of the sacrum to be the essential change, and not the ankylosis. The contrary opinion is held by Dr. Matthews Duncan. He says,* "It appears to me that the most important particular in the deformity of this pelvis, namely, its peculiar shape, has in most cases very little dependence upon the atrophy. The occurrence of cases of oblique deformity without any atrophy, and with or without ankylosis, is sufficient to show that atrophy is not essential to its production." He does not refer to any particular specimens of pelvic deformity in justification of these general assertions. To thoroughly follow out the line of argument here indicated would need an examination of every deformed pelvis in existence.

Oblique deformity without atrophy.—One assertion, vital to the question, is that cases of oblique deformity occur without any atrophy. This is true as regards the scolio-

* 'Researches in Obstetrics.'

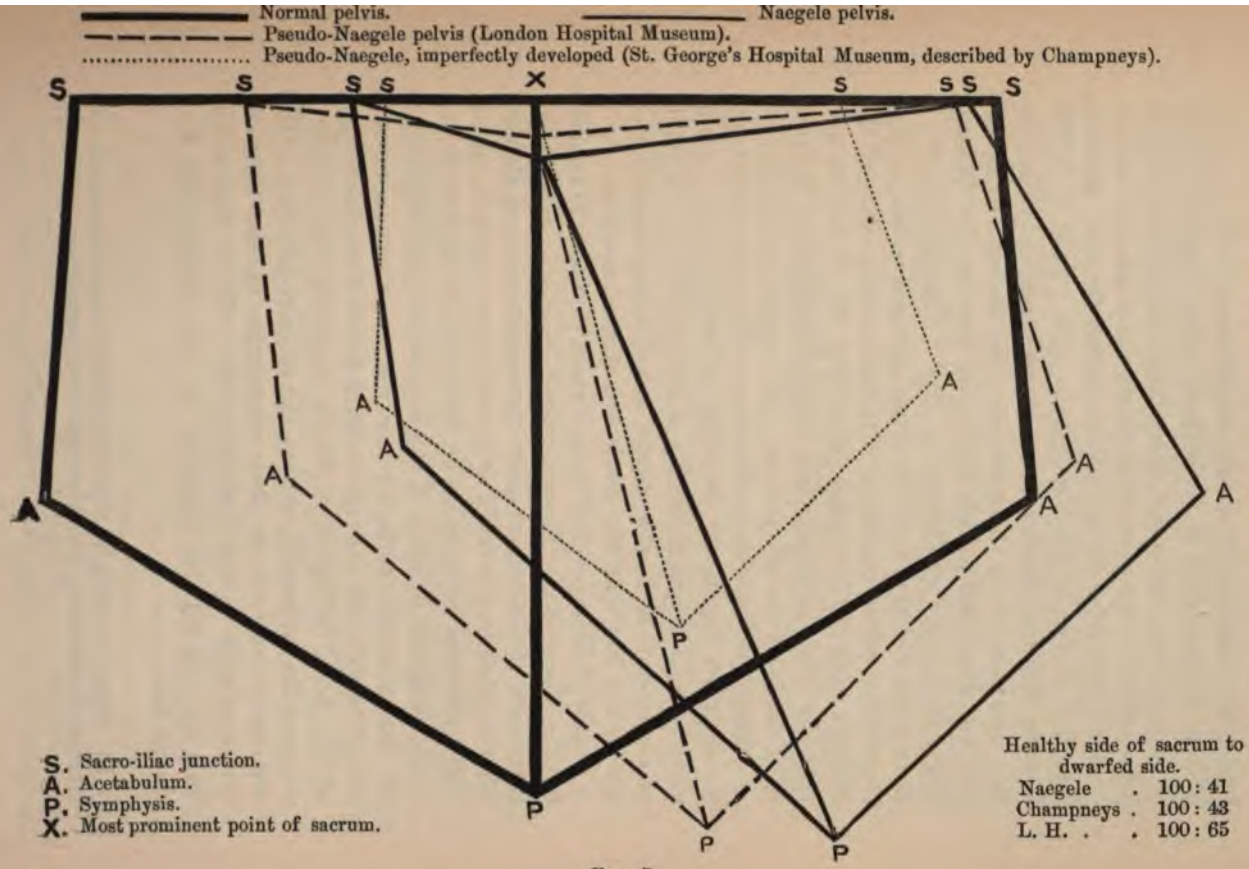
rachitic and osteo-malacic pelves ; specimens in which the problem is complicated by abnormal flexibility of the bones. I have not been able to find any case in which, without diminished breadth of the sacrum on one side, and without softening of the bones, oblique deformity has been present.

Oblique deformity without ankylosis.—There are cases in which, with atrophy of one side of the sacrum, but without ankylosis, deformity similar in kind to the Naegele pelvis, but less in degree, is present. That it is less in degree is, in my judgment, because in these cases of simple non-development of the lateral part of the sacrum, without disease of the joint, there is not destruction of part of the ilium, as in the Naegele pelvis. Thomas* figures such pelves.

Robert† says: "It is known that there are pelves in which, with synostosis of the sacro-iliac articulation, the curve of the innominate bone is not altered. We are therefore justified in holding that the synostosis of the sacro-iliac joint has *per se* no influence on the bending of the innominate bone." Duncan replies to this, that in these cases the ankylosis did not take place until after the bones had attained their full development. This I take to be an adequate answer so far as this argument goes, but it does not meet Robert's next sentences. "We find on the contrary, in wasting of one or both lateral masses of the sacrum a straightening of these (the innominate) bones, this being in proportion to the degree of the atrophy, so that the linea arcuata interna runs the more nearly straight the greater the wasting of the lateral mass of the sacrum. But conversely, no case is known in which the lateral mass of the sacrum is wasted, and the corresponding innominate bone is normal." Robert does not refer to pelves in support of his statements, any more than Duncan ; but his assertions may fairly be opposed to Duncan's.

* 'Das schräg verengte Becken, Leyden, 1861, Tafel v.

† 'Ein durch mechanische Verletzung und ihre Folgen quer verengtes Becken,' Berlin, 1883, S. 50.



Healthy side of sacrum to dwarfed side.

Naegele .	100 : 41
Champneys .	100 : 43
L. H. . .	100 : 65

FIG. 7.

I have not attempted to fully verify them. It is impossible to satisfactorily do so without *seeing* every specimen of such pelves ; plates and descriptions do not always give information on the particular points on which it is wanted.

But I will refer to two pelves, which confirm Robert's assertion so far as two specimens can. One is in the London Hospital museum, and I hope hereafter to describe it. The other is in the museum of St. George's Hospital, and was described to this Society in 1882 by Dr. Champneys, in a paper published in our "Transactions.'* I have made a diagram of the brims of these pelves, so that their shape can be compared with that of each other, of the Naegele, and of the normal pelvis (Fig. 7.) It will be seen that the order in which they come, according to breadth of dwarfed side of sacrum, and according to degree of oblique deformity, is the same. The correspondence between the degree of dwarfing of one side and sacrum and that of oblique deformity is not so close in the pelvis of Champneys as in the other ; and this may be accounted for by the fact that his pelvis was that of a child.

Pelvis of Robert.—Any theory which professes to account for the shape of the Naegele pelvis must also explain the formation of the transversely contracted pelvis of Robert. This requirement is fulfilled by the theory here advocated. The transverse contraction of the pelvis of Robert is due to the deficient breadth of the sacrum and the destruction of the adjacent parts of the ilia ; and the abnormal straightness of the ossa innominata results from the weight of the body falling more nearly vertically than it should do upon the acetabula, so that the counter-pressure of the femora is exerted to less advantage in the outward direction than in the healthy pelvis. Hence the acetabula are not carried outwards to the extent that they should be.

Dr. GALABIN thought that the Society was indebted to Dr. Herman for showing that, although the mechanism of production

* Vol. xxiv, p. 191.

of Naegele's oblique pelvis had already been much studied, there were points about it still open to discussion. He was not, however, convinced by the arguments of the paper. In the first place he could not accept the author's contention that it made no difference, as to leverage exercised on the innominate bone by the posterior sacro-iliac ligaments, whether the joint were ankylosed or not. If ankylosis existed, the action of the body weight must be transmitted through the bony union only. It could not possibly put any increased strain upon the ligaments. But, if the joint existed, the body weight would cause the sacrum to move down very slightly upon the ilium till the ligaments were put on the stretch. The tension of the ligaments would then exercise a leverage upon the innominate bone, and tend to throw its anterior end outward. He was not sure whether he rightly understood the author's diagram to mean that the pressure of the pelvis upon the femur was directed downward and outward, and that of the femur upon the pelvis upward and outward. If so, this would be contrary to the elementary principle of mechanics that action and reaction are equal and opposite. If the pressure of the pelvis on the femur acted downward and outward, that of the femur on the pelvis must act upward and inward. If the pressure of the femur on the pelvis acted upward and outward, that of the pelvis on the femur must act downward and inward. The fact was that, since the sacrum acted as a beam, the body weight was transmitted to the femora in a vertical direction, and the reaction of the femora to this weight acted vertically upwards. This could be proved by a consideration of the equilibrium of the leg. The reaction to the body weight in standing exercised by the ground upon the leg, apart from any small effect due to friction, must act vertically upward. Hence the force to which this is the reaction must be transmitted in a vertical line from the pelvis to the head of the femora. Besides this there was an inward pressure of the femur upon the pelvis, and a corresponding outward pressure of the pelvis upon the femur, due to the horizontal component of the action of the muscles which run obliquely between the two. He agreed with the paper of Dr. Champneys on the effect of the pressure of the femora, which the author had quoted, and had always endeavoured to teach similar views, but he was inclined to accuse the author of misinterpreting that paper. Since the vertical line of action of the reaction to the body weight transmitted to the acetabula, projected on a plane parallel to the brim, fell outside the sacro-iliac joint, it tended to rotate the anterior part of the innominate bone *outward* upon that joint as a hinge. This outward leverage at the acetabula might be called an "outward thrust," as it was by Dr. Champneys, but it was not a force and could not be subjected to the parallelogram of forces, as the author appeared to subject it. He therefore did

not attach importance to the angles measured by the author, and thought that the important point was the relative length of the arms into which the sacral beam was divided by the line of incidence of the body weight. Nor could he agree with the author, nor with Dr. Champneys, if he held that view, that on the whole outward thrust at the acetabula predominated. It was impossible to calculate *à priori* whether the outward leverage, due to the reaction to body weight, or the inward pressure and leverage due to muscular action would predominate. But he thought that a study of different pelves proved that, on the whole, and including the effects of lying on the side, the inward thrust predominated. This was shown especially by two forms of pelvis, that of congenital absence of legs, and that of the so-called congenital dislocation of the femora. In both these the action of the femora at the acetabula was wanting, and, in both, the pelvis was relatively wider than normal. Again, if rickets produced deformity later in life than usual, so that the child was standing and walking much, instead of generally sitting, the result was often not the usual flattened and relatively broad rachitic pelvis. If the bones were moderately softened, the generally contracted rachitic pelvis was produced; if they were greatly softened, the triradiate rachitic, or pseudo-malacosteon pelvis. In both these the effect of inward thrust at the acetabula was shown. The same was manifest also in the malacosteon pelvis. He agreed, however, with the author in one thing, namely, that the obliquity of Naegele's pelvis could be accounted for by other causes besides the ankylosis itself, and he thought that the deficiency of the sacral wing had probably greater influence than the ankylosis in producing it. Certain forces acted in a similar way in all the three chief forms of oblique pelvis, namely, Naegele's pelvis, the scoliotic pelvis, and the oblique pelvis from disease of one leg. If for any reason the acetabulum and the tuber ischii were displaced inwards in reference to the sacro-iliac joint, the fulcrum of the lever, the outward leverage of the reactions to the body weight, was diminished both in sitting and standing, because their line of action did not fall so much outside the sacro-iliac joint as usual. The forces causing inward displacement were therefore less resisted, and this effect was progressive as displacement increased, the forces causing obliquity acting with continuously increasing effect. In the case of Naegele's pelvis, setting aside the effect of the ankylosis, the initial cause of displacement was over-action of the muscles on the overweighted side, and consequent increase of inward pressure at the acetabulum. But while he thought that the general obliquity of Naegele's pelvis could be accounted for, even without the direct effect of the ankylosis, yet there was one peculiarity of its shape, which he considered was still one of the most striking proofs of the truth

of the theory so ably advocated by Dr. Matthews Duncan as to the effect of the leverage exercised by the posterior sacro-iliac ligaments in the development of the pelvis. If a pelvis were rendered oblique by excess of inward thrust at one acetabulum, the part of the ilio-pectineal line near the posterior end of the longer oblique diameter would naturally become more curved, just as flattening a ring by pressure in one diameter would increase its curvature near the ends of a diameter perpendicular to the first. This was the case both in the scoliotic pelvis and in the oblique pelvis from disease of one leg. It was well shown in a pelvis of the latter kind figured by Dr. Tyler Smith ('Manual of Obstetrics,' Fig. 149), in which there is ankylosis of one hip-joint, and consequent atrophy of that side of the pelvis, the patient having evidently walked with the opposite leg and a crutch. In Naegele's oblique pelvis precisely the opposite was the case. The ilio-pectineal line, near the posterior end of the longer oblique diameter, instead of being more curved than usual, and more curved than on the opposite side, was almost perfectly straight. He could not conceive any other explanation for this difference except that, owing to the ankylosis, the leverage on the innominate bone exercised by the posterior sacro-iliac ligaments, and consequent bending of the bone, have failed.

Dr. Matthews Duncan said it was comparatively easy when he first studied the mechanism of the pelvis, to make out new points which were now undisputed, but the numerous recent and conflicting memoirs on the subject showed that progress now in this department of science was beset with great difficulties. He was himself indebted to Champneys' work, particularly as correcting his former view of the direction of the upward push of the head of the femur in standing. Champneys showed that this pressure, as unaffected by the action of the adductors, was not upwards and inwards. The ultimate result, as Galabin pointed out, of the pressure as modified by the adductors, was upwards and inwards. The paper of Dr. Herman was a good contribution to this subject, and the great speech or criticism by Dr. Galabin, which he hoped to see fully reported. He (Dr. Matthews Duncan) would not venture on a criticism on so difficult and complicated a matter at present; but when the whole was in print, there would no doubt be further work on the subject by himself or others. He would say in passing that he regarded the Naegele pelvis as rather a malformation than as a deformity, the result of disease. It was a congenital malformation and might arise from deficiency of ossific centres. It was most important in this study to confine, as far as may be, and at present, the discussion to the normal pelvis and its modifications in the pelves of Naegele and of Robert. When you introduced into the discussion the scoliotic, the rachitic, the malacosteon

pelves, you plunged into a complex mass of difficulties which it was hopeless to solve till the Naegele or Robert pelves were explained. The obliquely contracted and the transversely contracted pelves were distinct, well-marked, uniform deformities, about which there was unanimity as to shape, as to congenital character, as to absence of bone disease; so that the differences from the normal pelvis were few and agreed upon. He (Dr. Matthews Duncan) was still inclined to the belief that the absence of one or of both sacro-iliac joints was the great factor in the deformity. He thought the peculiar shapes of these pelves and the hypoplasia of bones was owing to this absence of joints. In the other morbid pelves to which he had alluded there were several other factors of cardinal importance and whose influence it was difficult to ascertain and to weigh. Of these were age of appearance of disease, occupation of patient, disease of bone, duration of disease of bone, nature and extent of the disease so far as these had bearings on mechanism. Scientific progress was to be got by settling first the problems of the normal, the Naegele, the Robert pelves. He congratulated the Society on the interest it had taken in Dr. Herman's valuable and purely scientific paper.

Dr. CHAMPNEYS said that Dr. Herman's interesting paper had not succeeded, to his mind, in finally settling the question as to the essential cause of deformity in the Naegele pelvis. The whole subject of pelvic deformity was a most difficult one, and the forces modifying the shape of the pelvis were far from being settled, a few great facts only being finally established. In proof of this, he need only refer to the fact that only some two years ago he had endeavoured, and he hoped succeeded, in refuting the assertion, hitherto accepted, that the force of gravity pressed the heads of the femora upwards and inwards, in a paper already alluded to by Drs. Duncan, Herman and Galabin. The first point he would notice in Dr. Herman's paper was the statement that ankylosis of the sacro-iliac joint cannot prevent bending of the innominate bone. He could conceive that, besides the objection brought against this statement by Dr. Galabin, another might be urged, namely, that in Dr. Herman's Fig. 1 the ankylosis of the beam E F to the block A B C D might quite conceivably impede the bending of E F. Suppose these to be represented by pieces of wood, he was not prepared to admit that it would make no difference whether the beam E F was or was not glued to the block A B C D. The second statement he would question was that the bones of the Naegele pelvis retain their power of growing into their proper shape. He was prepared to admit that they were not softened; but we must also remember the possible influence of ankylosis (abolition of action) of a joint on the nutrition of its component bones. In the pelvis of a child, in which disease of one sacro-iliac joint had produced oblique deformity of the pelvis, which he had brought before the Society in a paper some

three years ago, the *whole of the side of the sacrum* down to the coccyx, on the side of the ankylosis, was markedly dwarfed. The above answer also serves for part of a statement further on, that the Naegele pelvis has nothing to do with alterations of the blood supply, nor with non-use of one side. As regards the latter half of the above statement, whatever disorders the equal balance of the "couple of forces" produced by the downward pressure of the body weight at the sacro-iliac joint, and the upward counter-pressure of the heads of the femora (which normally falls outside the line of action of the body weight) on each side tends to a progressively increasing disorder of the balance of the two sides, as Dr. Galabin has just remarked, and as he had himself set forth in the paper alluded to. Moreover, as he had there explained, the over-weighted side is naturally the side of the greater muscular action, including increased pressure of the femora, and increased muscular, and therefore osseous nutrition. To Dr. Galabin, and also to Dr. Herman, he would say that in that paper he endeavoured to prove: (1) That the action of gravity *must* tend to evert the distal end of the iliac beam (this being directly contrary to the accepted view); (2) that the "inward pressure of the femora," which undoubtedly existed in the malacosteon and other pelves, could not be due to this action, but could only be accounted for by the action of muscles. As to the question whether outward or inward thrust at the acetabula predominated on the whole, he was not yet prepared either to agree or disagree with Dr. Galabin's view that on the whole inward pressure predominated. Dr. Galabin's explanation with reference to the date and the amount of the softening of the bones was no doubt adequate to account for the different kinds of deformity in rickets, but he did not know how far actual observations of the subjects of such deformities had been made. No doubt, however, in a softened pelvis inward pressure *eventually* predominated, but he thought more than one explanation possible. With Dr. Galabin's remarks as to the disordered action of "couples" acting either through the acetabula or tubera ischia, and as to the cause of the straightness of the linea innominata in the Naegele as opposed to the scoliotic pelvis, he was in entire agreement; he had already advocated these views in papers before the Society and elsewhere. ('Edin. Med. Journ.,' September, 1880; 'Obstet. Trans.' for 1882, p. 205.)

Dr. W. Griffith stated that he differed with Dr. Herman with regard to the relative importance of the two questions raised by him; namely, the primary malformation at the sacro-iliac joint, and the secondary changes (if they were secondary) during the further growth of the pelvis, such as the flattening of the affected side; for he held that all theories on the second question were merely guesswork until the first question was decided, and if the changes which were supposed to be secondary were in

reality primary and intra-uterine, all the theories proposed with regard to them would fall to the ground. It is generally held, and on good grounds, that the sacro-iliac synostosis is congenital, but a case bearing on the possibility of its being acquired is recorded in the twentieth volume of the 'Dub. Med. Journal,' 1855. The patient was delivered in the Rotunda; a drawing of the pelvis is given, and it is described by Dr. Sinclair as exactly corresponding to the description then recently published by Naegele. Over the affected sacro-iliac joint was a scar, and on inquiry being made, the patient's mother stated that as a child she had long been laid up with an abscess at that part, following puncture at that spot with a large needle, in infancy, and since that time she had been lame. Dr. Griffith had written to Dublin to inquire if the specimen still existed, but had not heard anything of it. The specimen may be one of very great importance, and if it can be found, and on further examination it bears out the above statements, it would go far to prove the possibility of the condition being acquired, though the possibility of coincidences must be borne in mind. Dr. Griffith had lately been examining four pelves from cases of ectopia vesicæ, in which the symphysis pubis was congenitally absent, and the contradictions present in the different specimens made it very difficult to assign causes to the phenomena present. For instance, in two of them, one from an infant and the other from an adult male, the sides of the pelvis maintained nearly their normal curvature, but in two others, of an infant and an adult female, the sides were straight. Conditions such as these are of the highest importance in considering the effects of pressure in abnormally developed pelves. It is also a remarkable fact that in many cases of extreme scoliosis of the spine there is little or no obliquity of the sacrum and pelvis. There was one point on which Dr. Herman and all the previous speakers seemed to agree, but which appeared to Dr. Griffith to require reconsideration; it was, that the flattening of the side of the pelvis was due to the inward pressure of the femur, and that this inward pressure increased in potentiality with the giving of the side of the pelvis. How is it then, he would ask, that this inward pressure ceased to produce any further deformity at the very time when it was able to act with the greatest effect, namely, when it was applied, not to the apex of an arch, but to the middle of a flattened sunken arch? Dr. Griffith believed that the flattening was part of the original congenital deformity, and mentioned that a perfect specimen of the Naegele pelvis had been obtained from the post-mortem room at St. Bartholomew's Hospital that day.

Dr. Herman, in reply, said he would admit that, so far as regarded the part of the innominate bone behind the sacro-iliac synchondrosis, between it and the attachment of the posterior

sacro-iliac ligaments, the fact of ankylosis might be expected to produce some difference. But he did not know that the Naegele pelvis exhibited any peculiarity in the shape of this part of the bone. He did not think that the fact of ankylosis of the sacro-iliac joint would affect the shape of the part of the ilium between that joint and the acetabulum. The leverage action by which the assumed effect of ankylosis was explained he did not think existed. He did not, however, hold Duncan's theory of the Naegele pelvis to be inadequate merely because he (Dr. Herman) failed to understand the effects attributed to ankylosis by Drs. Duncan and Galabin; but on the broader grounds, that ankylosis was met with without this deformity, and that the deformity existed without ankylosis when the sacrum was narrow on one side; and that in these latter cases the degree of the oblique deformity was proportionate to the degree of lateral dwarfing of the sacrum. He regretted that in some parts of his paper he should have spoken of the outward pressure of the femora in a way to give rise to misunderstanding. He had used this language in places for the sake of brevity, meaning by it the tendency of the pressure of the femur to move the acetabulum upwards and outwards. Dr. Galabin, in his description of the equilibrium of standing, left out of consideration the anterior part of the pelvic ring, and argued that the outward pressure of the pelvis upon the femur must be met by a corresponding inward pressure of the femur upon the pelvis. This would be a necessity if there were no anterior pelvic ring. But Dr. Herman believed that the effect of the pressure of the femora upon the pelvis was to carry the acetabula outward, and that the inward force necessary to counteract this tendency and maintain equilibrium was supplied by the anterior part of the pelvic ring, viz. the pubic bones and their symphysis. When the symphysis was divided, pressure of the femora upwards did carry the acetabula out. While the femora tended to carry the acetabula upwards and outwards, the anterior pelvic arch, like a tie beam, pulled downwards and inwards. The resultant of these forces acted along the iliac beam; and it was this resultant which he had subjected to the parallelogram of forces. He differed both from Dr. Galabin and Dr. Champneys in that he held that no comparison could be properly drawn between the scoliotic or the malacosteon pelvis and the Naegele; for in the two former pelves the bones were softened, in the latter they were not. This was an essential difference; for when the bones were soft and yielded to pressure, the incidence of forces was altered, and the problem of the shape of each pelvis became an exceedingly complex one. The Naegele pelvis was a comparatively simple one, for the complex variations in shape produced by the yielding of the bones were absent. Hence the advantage of studying it. The pelvis figured by Dr. Tyler Smith, and

referred to by Dr. Galabin, was a complex one, for not only was there in it hip disease, but the ischium was absent. He would not go so far as to say, in opposition to Dr. Champneys, that there were no differences whatever, as to use of the limb and vascular supply, between the two sides of the Naegele pelvis; but such differences as there might be were quite insignificant. Naegele said that the patients from whom these pelves were taken were not lame, and were quite unaware of ever having had anything the matter with them, which was inconsistent with any great difference in the points mentioned. He was glad to find that Dr. Galabin agreed with him so far as this, that he held the deficient breadth of the sacrum to have greater influence than the ankylosis.

A CASE OF GASTROTOMY FOR EXTRA-UTERINE GESTATION IN WHICH THE PLACENTA NEVER CAME AWAY.

By James Braithwaite, M.D.,

OBSTETRIC PHYSICIAN TO THE LEEDS GENERAL INFIRMARY, AND LECTURER ON GYNÆCOLOGY AT THE YORKSHIRE COLLEGE.

In December, 1884, I performed gastrotomy for the removal of a full-grown fœtus which had been dead about three weeks.

It turned out to be quite free in the abdominal cavity, except that a fine transparent membrane appeared to shut off the intestines above, from the fœtus below; there was, however, nothing of the kind visible in the lower part of the abdominal cavity.

The large placenta fitted on the top of the uterus like a cap, and was spread out on its posterior surface and the neighbouring parts. The wound was closed except at its lower angle, where the funis was left hanging out, and also a drainage-tube. The operation was done aseptically, and with the able assistance of Dr. Hogg, the patient's medical attendant, and at her own house. The recovery was perfect, but rather slow. The curious and I believe unique point in the case was that the placenta never came away, except a morsel about twenty grains in weight, which protruded at the upper angle of the wound on the sixth day.

I should not have thought the case worth bringing before you but for this circumstance. The placenta must have been slowly absorbed, but I can find no record of such an occurrence in any previous case. The patient is at the present time in perfectly good health.

In two other cases of the same operation which I have had, the placenta came away black and semi-putrid: in one, with the cyst in which the child was contained, and which appeared to me to be formed by the expanded broad ligament of one side. This case was probably originally tubal, rupture occurring at the inferior margin of the tube, letting the child down between the walls of the broad ligament.

In the other case the placenta was attached to the abdominal walls, and its removal had to be effected, or assisted, by the finger several weeks after the operation.

Mr. KNOWSLEY THORNTON said that if the placenta had really been absorbed by the peritoneum, it was one of the most remarkable pathological facts ever recorded, but he would like Dr. Braithwaite to be asked whether there was not some mass representing the atrophied and changed placenta still to be detected. He had frequently pointed out what a wonderful power of absorption the peritoneum possessed, if only the material to be disposed of was presented to it in a healthy state, and free from putrefaction, and he had even ventured to call it a good "scavenger," but certainly the eating up of such an organ as the placenta passed his expectations. If proved to be an actual fact it was as interesting physiologically as pathologically, for it could not be doubted that the removal of the child and consequent changes in the condition of the mother had caused it to atrophy as other organs did when their function ended, and hence rendered its absorption more easy. He had himself shown a placenta to the Society undergoing very curious changes, after the death of the fœtus, in a case of extra-uterine fœtation upon which he had operated, but these changes suggested rather that the placenta would have been represented by a considerable mass of fibrous tissue if it had not been removed.

Dr. BRAXTON HICKS remarked that, whether the placenta in this case were absorbed or encysted, the fact was of much practical importance; indeed for some time he had thought that in cases where there was no tendency to decomposition, if the operation were done under antiseptic treatment, it would be best to close the wound with a drainage-tube as in this case. Unfortunately this is not so often the case as the contrary, for in six cases he had operated on, in four putridity had already occurred.

Dr. CHAMPNEYS thought that all that Dr. Braithwaite meant was that the placenta had not come away. In this respect the heading of his paper was more accurate and cautious than his descrip-

tion. The placenta might have remained and grown, or at least not disappeared. He intended, if occasion arose, to try and peel off the amnion and then wash out the vessels of the funis with boroglyceride, which would tend to prevent sepsis, and would be harmless if absorbed.

Dr. GRAILY HEWITT believed that the placenta of an extra-uterine pregnancy might come to disappear as in Dr. Braithwaite's case. It is well known that the vascular connection of the placenta with the adjacent parts is a very intimate one, as shown by the almost universal opinion as to the dangerous hæmorrhage likely to be produced by its removal in such cases. Probably the placenta would gradually shrink up and be for the most part absorbed.

Addendum.—On February 19th this patient was examined bimanually by Dr. Braithwaite, and no trace of the placenta could be detected, except a small ring of dense tissue situated behind the fundus uteri and about half an inch from it. There was not a trace of placenta on the roof of the vagina and posterior surface of the uterus, where it had been attached.

ANNUAL MEETING.

FEBRUARY 3RD, 1886.

J. B. POTTER, M.D., President, in the Chair.

Present—86 Fellows and 6 visitors.

The PRESIDENT declared the ballot open for one hour, and appointed Dr. Lewers and Mr. G. H. W. Thomas as Scrutineers.

Daniel Herbert Bastable, L.K.Q.C.P.; and Harvey K. Bradbury, were admitted Fellows of the Society.

Thomas Boyle, M.R.C.S. (Torquay); Edgar T. Underhill, M.B. Edin. (Tipton); and Samuel G. Milner, M.R.C.S. (Norwood), were declared admitted.

The following gentlemen were elected Fellows of the Society:—William Joseph Cross, M.B. (Victoria); and Lewis Jones, M.D. (Balham).

The following gentlemen were proposed for election:—William Profit Dukes, L.R.C.P. Ed., L.M.; Henry Trotter Rutherford, B.A, M.B. Cantab.; and Patrick Watson Williams, M.R.C.S. (Clifton).

SARCOMA OF VAGINA AND UTERUS. SECONDARY DEPOSITS IN LUNGS.

By Dr. W. Griffith.

Dr. W. Griffith showed a specimen of round-celled sarcoma of the fundus uteri, from a woman who presented the symptoms and signs of a fibroid of the uterus, and was admitted under Dr. Matthews Duncan's care, to have a small growth of the anterior wall of the vagina (of the same nature), immediately above the urethral orifice, removed. This was done, and a few days after severe dyspnœa came on and the patient died. The tumour, which was the size of a large orange, occupied the fundus uteri and consisted of round-celled infiltration of its muscular wall. The lungs were studded with secondary nodules.

Dr. Griffith thought that the condition of the lungs, which had not before given rise to any symptoms, was a most important factor in regard to the operation of hysterectomy for these cases.

FUNGATING PAPILLOMATA OF BOTH OVARIES.

By J. Knowsley Thornton.

These papillomatous ovaries were removed from a patient aged 53, at the Samaritan Hospital yesterday morning, and I bring them before the Society in their fresh condition because they are comparatively rare specimens.

Papilloma is very common in ovarian cysts, and in certain broad ligament cysts, but it is comparatively rare in this fungating form. Usually it remains as a growth from the interior of the cysts; in this case it has either started on the surface of the ovaries, or, starting in the cysts

while they are still very small, has rapidly made its way through their walls and spread over their exterior and also infected neighbouring peritoneal surfaces. Six months ago, the patient first noticed a slight swelling in the right groin ; this soon gave her pain when walking. Then her clothes became too tight, and enlargement was more rapid, with swelling of feet and legs, and very marked emaciation.

The patient has a bad family history, with cancer on both father's and mother's sides.

On opening the abdomen, through a thickened and vascular peritoneum, much glairy fluid escaped, and these tumours came into view. There was an infection-growth of some size on the back of the uterus, which I destroyed with Paquelin's cautery, but considering the character of these growths there was remarkably little infection of peritoneal surfaces, and I am in hopes that it may turn out to be that kind of papilloma which is destroyed by removal of the ovaries, and the slight irritation set up by sponging, &c. I am now watching two cases in which very extensive papillomatous disease of the peritoneum, starting from the ovaries, has entirely disappeared. In the one case ('Pathological Transactions,' vol. xxviii, pp. 189—195) the cyst ruptured and the infection began while the patient was under my care ; double ovariotomy and careful sponging have resulted in a cure which has lasted nine years, and careful examination shows that the very extensive disease of the peritoneum has disappeared. In the other case I merely explored and emptied out the fluid, and the cure must, I think, be regarded as spontaneous.

These exceptional and remarkable cases must not, however, make us shut our eyes to the facts that papilloma is especially common in broad ligament cysts, that tapping such cysts frequently causes its diffusion over the peritoneum, and that the majority of cases which get papilloma of the peritoneum, whether from tapping, from rupture of cysts, or from the papilloma growing through the cyst wall, die of what is clinically cancer of the peritoneum.

Hence it is bad practice to tap these cases, and when they can be diagnosed they should be removed at once, with great care, to avoid any fouling of the peritoneum with their contents. The patient from whom these fungating tumours were removed on Feb. 2nd has made a good and uninterrupted recovery. Her future history will be reported to the Society.

Mr. DORAN stated that Mr. Thornton's case suggested many considerations which should never be overlooked. In the first place, whenever an ovarian tumour is suspected, an operation cannot be performed too soon. When the tumour is small it can easily be removed, whether unilocular, multilocular, glandular, papillomatous, or even malignant. If it be allowed to grow large innumerable complications may arise, rendering operation unjustifiable, whilst the patient must be left to her fate. Thus a papillomatous tumour is particularly easy to remove whilst it is small, but it chiefly involves the hilum of the ovary and therefore tends to invade the broad ligament; the tumour then becomes sessile and exceedingly difficult to extirpate; besides, its contents ultimately extend beyond its capsule, as in Mr. Thornton's case, and invade the peritoneum. Secondly, a suspected ovarian cyst, or broad ligament cyst, should never be tapped with a view to cure without operation. An exploratory incision is a most harmless proceeding under ordinary precautions, and the removal of a simple broad ligament cyst is very easy. If tapping be preferred, it often fails to cure; besides, a considerable proportion of broad ligament cysts contain papillomatous growths (especially if they be truly parovarian), and paracentesis causes these growths to be scattered over the peritoneum. For true ovarian cysts of any kind, tapping is always worse than useless.

Dr. MATTHEWS DUNCAN regarded tapping as the best treatment in cases of simple parovarian cyst. It involved less danger than extirpation and was often successful. The extirpation of small papillomatous ovaries involved many difficulties. He would only say, in regard to a case mentioned, that he did not believe any operation could cure where the malignant disease had extended to several different parts of the peritoneum.

Mr. DORAN wished it to be understood that he had spoken upon clinical as well as pathological evidence. He knew of several cases of tapping, followed by rapid infection of the peritoneum and, on the other hand, he had found papillomatous growths in several "simple broad ligament cysts" successfully removed during lifetime.

A CASE OF REMOVAL OF BOTH OVARIES DURING PREGNANCY.

By J. Knowsley Thornton,
SURGEON TO THE SAMARITAN HOSPITAL.

On February 4th of this year (1885) I showed as fresh specimens two dermoid ovarian tumours which I had removed that afternoon from a young married woman who was in the fourth month of pregnancy. I now bring a complete record of the case to the notice of the Society.

M. W—, aged 22, was placed under my care by Dr. Galabin in January, 1885. She had married in October, 1884, and menstruated once shortly afterwards, the period ceasing on October 16th; pregnancy followed immediately.

On admission into the Samaritan Hospital on January 19th the *condition* was as follows: Complexion dark and pale, well nourished, heart, lungs, and kidneys healthy. Abdomen uniformly distended and much larger than it should be in the fourth month of pregnancy. The greater part of the enlargement was evidently due to a large fluctuating tumour, but the enlarged uterus could be distinctly made out lying in front and rather to the left of this tumour. A clear note was obtained in the epigastrium and in both flanks. The vagina had a distinct violet colour and was bathed with mucus, and the cervix was soft. There was a large apparently solid mass in the pouch of Douglas behind and to the left of the cervix. There was no regular morning sickness, but for the last three months she had been frequently sick after meals.

History.—Has had measles, whooping-cough, scarlet fever, and diphtheria. Menstruation began at fourteen and was regular up to pregnancy.

Family history.—Unimportant.

About a year before pregnancy she noticed that her abdomen was getting larger, but she suffered no pain or inconvenience from it. The enlargement is now very rapid, and there is some pain and tenderness in the abdomen over the uterus.

Diagnosis.—Ovarian tumour and pregnancy.

I decided to perform ovariotomy, because after watching her for a fortnight I did not think it at all likely that she could wait till after delivery. Patients operated upon at this period of gestation generally avoid miscarriage and recover better than those operated upon a month or six weeks later.

The operation was performed on February 4th, and on opening the abdomen I found a free multilocular dermoid tumour of the right ovary with its pedicle twisted once completely round and much congested. I untwisted it and transfixed as far as possible from the uterus, tied in two parts and then passed a third ligature round the whole pedicle and cut the tumour away, when the stump of the pedicle immediately twisted round again into its old position.

Passing my hand down behind the uterus, I found a tumour of the left ovary wedged down in the pouch of Douglas, and had some difficulty in dislodging it. I found that it was also dermoid, and removed it after securing its pedicle by the same method, and as far as possible from the uterus.

There was very little sponging necessary, and no exposure of intestines or uterus to the spray. My usual silk sutures, and dry carbolic gauze dressing, secured with adhesive plaster, were used. The operation occupied three quarters of an hour.

Both tumours were dermoid; the right and larger one had two cavities containing patches of skin with tufts of hair, cartilage, bone, and a tooth which opened into one another.

The left side one had a large patch of skin, with hair

and cartilage, and on its outer surface a very fine and well-developed true corpus luteum.

There is but little to record in the after-progress of the case. There was some sickness, but it was over in twelve hours. There was no unusual pain. The temperature rose on the evening of operation to 100°, and then rapidly subsided, and was normal on the second day; the quickest pulse was 92. According to my usual custom, the chief feeding was by three ounce rectal enemata of nearly cold beef tea, and twenty drops of laudanum were given in every other injection (*i. e.* every six hours). On the second day the nurse, contrary to my orders, gave her some warm tea, and this brought on some throbbing in the abdomen, but it quickly passed off again. The sutures were removed on the seventh day, when the wound was found to be soundly healed by first intention. The bowels acted well after enema on the eighth day. On the tenth day there was some slight bearing down, but it passed off with an increase in the quantity of laudanum. On the thirteenth and fourteenth days there were large actions from the bowels, and on the seventeenth day she got up. On the eighteenth day she complained of some throbbing pain in the left side, and on examination I found a small tender swelling in the situation of the left pedicle. She was kept quiet in bed for a few days longer, and went home quite well on the twenty-seventh day after operation. The steady enlargement of the uterus and of the breasts showed that the pregnancy was uninterrupted.

On June 23rd, without previous warning, labour came on rapidly, the child was born before the doctor arrived, and the placenta was soon after expelled. The uterus contracted well and there was no hæmorrhage. The lochia were normal, and she nursed the child and was still nursing a fine big boy when she came to me for examination on October 20th.

There is still a little pain in the left side where the left pedicle was tender, and on careful vaginal examination I

could detect a little hardness there. The uterus is atrophic. She is suffering from flushes, chills, &c., as is common after the menopause, whether naturally or artificially produced.

Remarks.—When showing the tumours on the 4th of February, I said that I believed this was the first case in which both ovaries had been removed, together with the Fallopian tubes, during pregnancy, and I expressed some anxiety as to the result, fearing that the metrostaxis which is almost universal after the removal of both ovaries and tubes would come on and produce abortion, and I was anxious also as to the effect of the double operation upon the contractile power and after-involution of the uterus. All these fears were happily groundless, and the patient is in perfect health, and mother of a fine son. There are many points of extreme interest in the case, and to these I will briefly refer.

I should have mentioned that while under observation before operation she had several attacks of abdominal pain, with sickness, faintness, and slight rise of temperature. These were, I have no doubt, due to the twisted pedicle. The way in which the stump twisted again immediately the tumour was cut away suggested that its position was influenced by the circulation.

The case illustrates in a remarkable manner the fact, which I have often before observed, that very advanced cystic disease may be present in both ovaries and menstruation remain unaffected. Here, in spite of the left ovary being turned into a large dermoid cyst and displaced to the bottom of the pouch of Douglas, with the tube elongated and distorted, ovulation not only continued normal but pregnancy took place, and a true corpus luteum was formed in the wall of the cyst. This may well be borne in mind in any case in which both ovaries are diseased and it is important that the woman should bear a child. The least diseased of the two ovaries might be treated by emptying the cysts and then left in the hope that it might fulfil its function before it again

enlarged sufficiently to render its extirpation imperative.

In the case under consideration the pedicles were long enough to enable me to ligature them at some distance from the uterus, and this I considered of the first importance for the avoidance of metrostaxis after the operation. I am certain that the more closely the ligatures are applied to the proper uterine tissue the more speedy and sure is the metrostaxis after operation.

In regard to the importance which has been given by Mr. Tait to the tubes in relation to menstruation, it might be thought that leaving an inch of tube on each side, as in this case, would have favoured the very thing I was anxious to avoid. The result so far proves the correctness of my view, and the fact that the uterus is now atrophic, like that of an old woman after the menopause, shows that it is not the leaving of small portions of tube which vitiates these operations when undertaken for the purpose of bringing on an artificial menopause. If this patient has any return of menstruation I will report it to the Society, but I have no fear that such report will ever have to be made.

It is a fact of very great interest that a double operation of this kind should have been performed, and that the patient should have made such a perfectly smooth recovery during pregnancy. I attribute this in great measure to the regular use of the opium, which it is still my habit to give in all abdominal operations unless specially contraindicated. In this case the dose every six hours was continued for many days longer than is customary in ordinary cases.

Whether the operation is in any way responsible for the birth taking place at the eighth month, instead of at the full term, is a matter of speculation; there is nothing to indicate such influence, and births at this period are sufficiently common to make one regard it rather as a chance coincidence.

It appears to me of the greatest interest that gestation

to the eighth month, an easy natural labour of a healthy child, normal lochial discharge, normal lactation, and perfect involution of the uterus should have followed the removal of both ovaries and tubes. And I cannot but think that it is very remarkable that whilst the removal of the appendages exercised no perceptible influence on the performance of these healthy functions, it has, nevertheless, when they are completed, rapidly produced that atrophic change in the uterus which makes this operation so beneficial in certain diseased conditions of that organ, and that the patient should, while still suckling her child with a full supply of milk, be suffering from the flushes, chills, and other symptoms which are associated with "change of life."

I have thought it well to place a full record of the case before this Society, and I await with much interest the views of the Fellows upon the curious physiological and pathological problems which it suggests.

Dr. JOHN WILLIAMS said that the case was unique and of great interest in many ways. In a note he had read before the Society in 1884 he had described the involution of the puerperal uterus in the absence of the ovaries. In that case the left ovary had been removed some years previously, and the right was removed soon after labour set in. The course of the process of involution might been been affected directly by the interference of the operation in this case, but in Mr. Thornton's such could not have been the case, for the operation had been performed months before the labour set in. He would ask Mr. Thornton if any observations had been made on the process of involution in his case.

Dr. ROUTH said, interesting as Mr. Thornton's cases were, he wished to remark on two points he had raised. First, as to the milk secretion. The atrophy of the uterus could not impede lactation. For instance, Dr. Livingstone had stated in his African work, that the wives of the kings there were not allowed to suckle their own children: it was thought derogatory; but the child was handed over to the grandmother, who was generally an old woman, in whom possibly the catamenial function had terminated. By the application of certain plants both to the mammæ and pudenda, and by applying the child itself to the breast, the secretion of milk returned in the grand-

mother's breasts, and she continued thenceforward to act as the grandchild's wet nurse. Still more remarkable were those well-authenticated cases where negro men among the Americans, and Russian men suckled their children, the mothers not being allowed or able to do so. In men there could be certainly no question as to the condition, atrophic or otherwise, of a uterus. The second point to which he took objection, was the conclusion that menstruation depended always upon ovulation. That was still a question *sub judice*, and facts were accumulating to show that menstruation had really very little to do with ovulation. This very subject was one now being investigated in another Society, and he (Dr. Routh) thought it would be found that however fascinating the theory held hitherto might be, it would be found untenable after full inquiry.

Dr. Godson drew attention to the fact that after the removal of uterus and ovaries by Porro's operation the patient was able to nurse her child as well as after ordinary delivery.

Dr. Matthews Duncan reminded the Society that Dr. Tyler Smith had supported the view that the commencement of labour was function of the ovaries. This view was now rendered almost untenable, seeing that, in the case narrated, the process of labour went on as usual in the absence of both ovaries. That the ovaries were indissolubly connected with menstruation Dr. Matthews Duncan had no doubt whatever.

Annual Meeting.

The audited balance-sheet of the Treasurer, Dr. Galabin, was read.

It was proposed by Dr. Playfair, seconded by Dr. Carter, and carried *nem. con.*, "That the audited report of the Treasurer, just read, be received, adopted, and printed in the next volume of the 'Transactions.'"

BALANCE-SHEET OF THE OBSTETRICAL SOCIETY OF LONDON.

(Abstract of the Receipts and Expenditure for the year ending December 31st, 1885.)

1885. RECEIPTS.	£	s.	d.
To balance in hand from 1884	237	10	9
(1) 645 ANNUAL SUBSCRIPTIONS at £1 1s., realising	677	9	0
(2) 5 COMPOSITION FEES at £10 10s.	52	10	0
(3) MIDWIFERY EXAMINATION FEES	74	18	0
(4) SALE OF 'TRANSACTIONS' and 'RULES FOR INFANT MANAGEMENT' (Longmans)	63	8	2
Do. do. (Society)	42	12	9
Do. Duplicate books	3	3	0
	109	3	11
(5) INTEREST on Consols	39	6	3
Amount of stock, 3 per cent. Consols, standing in the names of the Trustees £1400 0 0			
	£1190	17	11

By EXPENDITURE.	£	s.	d.
(1) 'TRANSACTIONS,' VOL. XXVI, Printing, Lithography, Paper and Binding, Index, and delivery of Volume	318	17	1
(2) LIBRARY: Books Purchased and Binding	51	15	8
(3) MUSEUM AND LIBRARY: Rent £100 0 0			
Librarian, Salary and Commission 141 2 9			
Repairs to Furniture, Cleaning, Gas, &c. 22 9 4			
Petty Disbursements 1 17 2	265	9	3
(4) GENERAL MEETINGS AND OTHER EXPENSES: Rent of Meeting-room £42 0 0			
Expenses of Meetings 24 1 6			
Stationery and Postage 45 2 9	111	4	3
(5) EXAMINATION OF MIDWIVES: Expenses	3	19	4
(6) BANKING EXPENSES: Commission, Stamps, Postages, &c. 0 7 10			
Cheque-book 0 4 2	0	12	0
Balance in hand at Bankers	439	0	4
	£1190	17	11

G. ERNEST HERMAN, *Secretary.*

February 1st, 1886

Examined and found correct,

J. WATT BLACK,
E. CLAPHAM,
H. R. FULLER,
MONTAGU HANDFIELD JONES,
} *Auditors.*

The report of the Honorary Librarian, Mr. Knowsley Thornton, was then read.

Report of the Honorary Librarian.

"I have the pleasure to report favourably to the Society as to the state of its Library. It has, during the past year, been more used by the Fellows than in 1884, especially for reference. Its value, both as a lending and reference Library, has been increased during 1885, by the addition of 128 volumes. Forty-seven volumes (including 2 vols. of bound pamphlets) have been presented, 28 volumes (including 1 vol. of bound pamphlets) have been purchased, and periodicals make up the remaining 53 volumes. The total number of volumes in the Library on Dec. 31st, 1885, was 3534. The Librarian has called my attention to the fact, that the country Fellows generally, do not seem to know that they can borrow books from the Library, if they pay the carriage both ways. Several who were about the resign their Fellowships have reconsidered the matter on having this privilege pointed out to them.

"A large number of back volumes of the 'Transactions' are still on hand, and can be purchased from the Librarian.

"J. KNOWSLEY THORNTON,
Hon. Librarian."

The adoption of the report of the Hon. Librarian, Mr. Knowsley Thornton, moved by Dr. GODSON, and seconded by Dr. HORROCKS, was carried unanimously.

The report of the Chairman of the Board for the Examination of Midwives (Dr. John Williams) was then read.

Report of the Chairman of the Board for the Examination of Midwives.

"The work of the Board for the Examination of Midwives continues to increase from year to year, and the number of candidates for the diploma of the Society, which five years ago was 12 only, was in the past year 82. Of these 68 satisfied the Examiners and 14 failed. Although about one sixth of the number who present themselves at the examination do not pass, yet the Board is glad to be able to report that those who succeed are each year generally better educated as well as better trained in their professional duties.

"JOHN WILLIAMS,
Chairman."

The reception of the report of the Chairman of the Board for the Examination of Midwives (Dr. John Williams), and a vote of thanks to Dr. John Williams, were proposed by Dr. MATTHEWS DUNCAN, seconded by Dr. MALINS, and carried with applause.

Dr. MALINS, in seconding the proposition of Dr. Matthews Duncan, said that he thought that in the work alluded to, two features were necessary for its successful accomplishment,—aptitude and time. No one could be better qualified than Dr. John Williams as regards the former, while the Society also was under a great obligation to him for the amount of valuable time he placed at their disposal in this service.

The Scrutineers retired, and on their return the President declared the result of the ballot for officers and Council for the ensuing year.

Honorary President.—Arthur Farre, M.D., F.R.S.
President.—John Baptiste Potter, M.D.
Vice-Presidents.—James Watt Black, M.D.; Peter Lod-

wick Burchell, M.B.; Charles James Cullingworth, M.D. (Manchester); William Henry Day, M.D.; George Ernest Herman, M.B.; Edward Malins, M.D. (Birmingham).

Treasurer.—Alfred Lewis Galabin, M.A., M.D.

Chairman of the Board for the Examination of Midwives.—John Williams, M.D.

Honorary Secretaries.—Francis Henry Champneys, M.A., M.B.; John Knowsley Thornton, M.B., C.M.

Honorary Librarian.—Percy Boulton, M.D.

Other Members of Council.—Frank Argles; Rayner W. Batten, M.D. (Gloucester); Edward Burd, M.D. (Shrewsbury); J. Matthews Duncan, M.D., F.R.S.; William A. Duncan, M.D.; Arthur Guy Elkington (Surgeon-Major); Alfred Thomas Gibbings, M.D.; John T. Griffith, M.D.; Walter S. A. Griffith, M.B.; Frederick B. Hallowes (Redhill); Peter Horrocks, M.D.; Evan Jones (Aberdare); Alfred Edward Aust Lawrence, M.D. (Bristol); William Appleton Meredith, M.B., C.M.; Arthur Roper; Amand J. McC. Routh, M.D.; Edward W. Tait; James Hopkins Walters (Reading).

The PRESIDENT then delivered the Annual Address.

ANNUAL ADDRESS.

Gentlemen,—It is the duty of the President at the commencement of a new Session to give some account of the Society during the past year, a brief retrospect of work done, or attempted, and a short memorial of those who have passed away.

I have first to congratulate the Society on another year of prosperity,—I might say of calm prosperity. This has been continuous from its foundation, and the Society is still sought as representing the great field of obstetrics in its widest interpretation.

Our finances are in a most satisfactory condition, as shown by the Treasurer's report. Our numbers keep up, and although during the year our losses from death, resignation, and erasure amount to 49, we still reach the respectable total of 702, 29 new members having been elected during the year.

Our Library continues to increase at a steady rate, the present number of volumes being 3534, and we have the satisfaction of feeling that in our present premises we shall not be pressed for space for some years to come. The rooms are well used, but the advantage of them as a meeting place, especially for country Fellows, to see the medical periodicals, write a letter, or meet a friend, is still not as fully appreciated as it might be.

Our Midwifery Board continues its useful work, and during the year the number of candidates for the diploma rose to 82, of whom 68 were found qualified to receive it, the whole number on our register now being 315.

The attendance at our meetings has been extremely good, and the papers and discussions of even more than usual interest. To give a summary of these I consider

would be out of place here. You will shortly have in your hands the volume of 'Transactions,' and this will be the best practical proof of the value of the work done. I may say that the volume will be an extremely handsome one, on account of the number of beautiful illustrations contained in it. I cannot refrain, however, from noticing some of the papers, especially an interesting one by Dr. William Duncan, which was read at the January meeting, on "Extirpation of the Entire Uterus." The paper was a very complete and exhaustive one, and of special value from the careful tables of statistics which it contained. It gave rise to a lively discussion, which occupied a great part of two meetings. Although the general feeling of the speakers was against the performance of the operation in cases of malignant disease, particularly when limited to the cervix, still, in face of so terrible a malady, and where the body of the uterus is affected, the operation may be still held to be *sub judice*.

A very interesting paper by Dr. John Williams was read at the April meeting, on the "Circulation in the Uterus, with some of its Anatomical and Pathological Bearings." It forms another contribution to the interesting but still obscure subject of the cause of the symptoms in cases of uterine displacement.

We have had during the year three papers from the pen of Dr. Matthews Duncan, all referring to the so-called "Lupus of the Female Generative Organs." This disease has hitherto been little more than mentioned in our text-books, and these papers, giving a careful and accurate description of the disease, and accompanied as they are by beautiful coloured drawings from the actual cases, will give a great impetus to the study of the subject, and form a most important addition to our knowledge.

The Society is also much indebted to Dr. Thin for his valuable contribution to its histology.

Another interesting paper was that of Dr. John Williams on "Serous Perimetritis," and the value of his paper was enhanced by the careful autopsy in one of the cases. Of

the same class was the paper read by Dr. Herman on the "Suppuration and Discharge of Pelvic Dermoid Cysts," in which, among other suggestions, he advocated the more frequent exploration of the bladder by incision in preference to urethral dilation.

Dr. Priestley's paper, entitled, "Notes of a Visit to some of the Lying-in Hospitals in the North of Europe, and particularly on the Advantages of the Antiseptic System in Obstetric Practice," led to an animated discussion, in the course of which it was elicited that the results in our lying-in hospitals at the present time may be said to be truly splendid, a mortality of about half per cent., or five in the thousand, competing well with the numbers in ordinary private practice, where the mortality has been roughly estimated at about 1 in 120. The question as to how far the antiseptic system could be conveniently carried out in ordinary obstetric practice was discussed at some length, and the subject was by no means exhausted. The discussion would have been prolonged but for want of time, and might be revived again at no distant date with advantage.

Lastly, I may mention a carefully recorded "Case of Spurious Labour," which was related by Mr. Roxburgh Fuller at the December meeting.

While on the subject of the 'Transactions,' I may say that it has long been felt as an injustice to the authors of papers that so long a time should elapse between reading and publication. Thus a paper which has been read in the January of one year does not appear until the volume of 'Transactions' which comes out in the spring of the following one. This subject has been seriously considered by the Council, and they have arranged for the publication of the 'Transactions' at more frequent intervals for the convenience of those Fellows who would prefer to have them in this form. This will not interfere with the usual annual volume, which will still be issued at the end of the session.

One painful matter has occurred during the year, which

has marred the otherwise perfect harmony of our proceedings. I refer to the position taken by one of our Fellows, Dr. Heywood Smith, in the notorious Armstrong case. As I explained at the time, the Council took the matter into their anxious consideration, and came to the conclusion ultimately that they were not justified in recommending the Society to put in force the rule which provides for the removal of the name of a Fellow. The College of Physicians, who also carefully considered the case, came to the conclusion that a severe censure should be passed, and this was done by the President. In the performance of this duty he took the opportunity of making some general remarks on the course that should be adopted in the examination of virgins. These are so important that I venture to quote them here, and to state my opinion of the high value I attach to them as a code of advice to all of us in our necessarily delicate relations with that portion of the female population. He says, "Speaking generally, and without regard to this special case, or to cases involving medico-legal questions before, or about to come before, Courts of Law, it is, in the opinion of the College, a grave professional and moral offence for any physician to examine physically a young girl, even at the request of a parent, without having first satisfied himself that some decided medical good is likely to accrue to the patient from the examination, and also without having first explained to the parent or legal guardian of the girl the inadvisability of such examinations in general and the special objections that exist to their being made. Moreover, the College feels that a young girl should on no consideration be examined, excepting in the presence of a matron of mature age, and, so far as the physician can know, of good moral character."

An attempt has again been made this year to bring the subject of the examination and registration of midwives before the notice of Parliament. A deputation from the Council waited upon Sir John Lubbock, Member for the University of London, and Treasurer of the Royal Mater-

nity Charity, to endeavour to induce him to take up the matter and introduce a Bill on the lines of the regulations drawn up some years ago by this Society. Sir John, however, saw difficulties in the way, though he showed considerable interest in the matter, and gave us some suggestions; but in the state of Parliament at the time, and with a dissolution and general election pending, it was thought prudent to abstain from further action for the present. The Council will, however, be prepared to deal with the question again at the earliest opportunity. While, however, the law stands as it does now, and a man is permitted to act as a man midwife without medical qualification, we can scarcely hope to gain our point as to ordinary midwives. I refer to the case of Tully *versus* Macgill, which was reported in the 'Times' of Nov. 27th. In the course of the case it transpired that the plaintiff had attended about 550 midwifery cases in the last two years, and he admitted he had no legal qualification to practise. The report goes on to state, "It appears that no legal qualification is necessary to carry on the profession of an accoucheur."

Somewhat akin to the midwife is the useful class of women known as monthly nurses. It has seemed to me that there is great need for improvement in this. The subject was touched upon more than twenty years ago by Dr. Oldham, but the state of things remains unaltered, and the bulk of women who take to this work are either those worn out and therefore unfit for anything else, or, thrown upon the world by domestic troubles, they find this a rapid and ready method of occupation. I think it would be well if the Society could do something towards remedying this state of things. Why should not a monthly nurse be as thoroughly trained as one who is to take charge of strictly medical or surgical cases? Surely in our department there is need for this knowledge and something more. I would have all these women trained in the ordinary way to become good nurses for the sick; then having become trained nurses, I would let them gain

the small amount of special knowledge required in connection with the lying-in room. These women would then be available for us during the best years of their lives, instead of too often in a worn and drivelling old age. I do not think that there would necessarily be any advantage in instituting a special examination for them, further than is the custom in ordinary medical and surgical training, but it would be a great point that proper regulations should be laid down for their efficient teaching.

It only remains for me now to pay a short tribute of respect to those whose loss we have to deplore during the past year.

Of Dr. Lanchester, of Croydon, whose premature decease we had to lament on January 8th, 1885, his death occurred so early in the year, and before my predecessor, Dr. Gervis, had vacated his office, that he begged as a personal friend to have the privilege of recording the sad event, and he alluded in feeling and appropriate terms to the great loss the Society and profession at large had sustained in his early death.

Mr. Thomas Derry Jones, of Islington, joined the Society in 1873. He was educated at University College, and after taking the usual qualifications entered into practice in Islington fifteen years ago. He was successful in gaining the esteem and regard of his patients and fellow practitioners, while his brilliant social qualities will be long remembered by all who knew him. He died from kidney disease at the early age of forty-one.

William Braithwaite, M.D., of Leeds, was born in 1807, commenced his studies under the late Mr. Thomas Teale, and then coming to town became a student at St. George's Hospital. Having taken the ordinary diplomas he commenced practice in Leeds in 1830, and shortly after was appointed Lecturer on the Diseases of Women at the Leeds Infirmary. He joined this Society in 1862, and was on the Council from 1867 to 1870. His name will, however, be best known in association with the 'Retrospect of Medicine,' which he commenced in 1840, and

continued to edit for many years (published half-yearly it has now reached its ninetieth volume). Dr. Braithwaite was the oldest practitioner in Leeds, and was much esteemed and regarded by a large circle of friends and patients in his native town. He died on January 31st.

During last year have also died Dr. Thomas Sylvester Gell, who joined the Society in 1877 and died in Queensland at the early age of forty; Dr. Joseph Stone, of Manchester, who joined the Society in 1859; John Chamberlain Eaton, of Ancaster, Grantham, Borough Coroner, who joined the Society in 1878, and died aged forty-one; and William Hugh Aldersey, F.R.C.S., of Surbiton, who was one of the early Fellows of the Society.

Dr. Joseph Bunny, of Newbury, died on May 30th at the great age of eighty-six. After graduating in Edinburgh in 1823 he settled in practice in Newbury and became the first Honorary Surgeon to the Dispensary on its foundation in 1835. He was also Coroner for the borough from 1839 to 1873, afterwards becoming one of the magistrates. He had for many years retired from practice, and was one of the fortunate few who enjoyed his well-earned ease in the full possesssion of his faculties to the end of his long life. He joined the Society in 1861.

George Dransfield Brown died in July at the age of fifty-seven, was a student of St. Thomas's, and became a Fellow of this Society in 1866. He devoted much of his time to the study of scientific subjects, especially that branch of natural history including the Invertebrata. He also took a great interest in botanical pursuits, and during the two-and-twenty years that he practised in Ealing secured a large circle of friends.

William Michell Clarke, of Clifton, Consulting Surgeon to the Bristol Hospital, whose sudden and unexpected death took place on October 2nd, was a native of Bodmin, where he was born about the year 1829. Educated at St. Bartholomew's, he entered into practice, becoming Surgeon to the Bristol Hospital. This appointment he held for ten years, and on his retirement became Consulting

Surgeon, a step he always after bitterly regretted, as he was a good and careful operator, and devoted to his hospital work. He was one of the few provincial surgeons who early performed the operation of ovariotomy, but he will be best known by his work in connection with excision of the knee-joint, on which subject he wrote an elaborate article in 1863. He was held in the highest esteem by his professional friends, and secured the affectionate regard of a large circle of patients. He became a Fellow of this Society in 1872.

William Johnson Smith, M.D., of Weymouth, was a member of an old and highly connected Dorsetshire family. He graduated in Edinburgh in 1842, and then proceeded to continue his studies in Paris. He was one of the early Fellows of this Society, joining it in 1859. Settling in practice at Weymouth he soon succeeded in attaining a high professional position there. In 1848 he founded the Sanatorium for Diseases of Women and Children, to which he became attached as Physician, and was also a Consulting Physician to the Weymouth Royal Hospital. He died in April at the age of seventy-two.

John Thorburn, M.D., of Manchester, was born at Huddersfield in 1834, his parents shortly after removing to Manchester. He was educated in Edinburgh, first at the High School, afterwards proceeding to the University, where he graduated in 1855, having been awarded the mark of distinguished merit for his thesis on surgical fever. After taking his degree he held the posts of House Surgeon and House Physician in the Royal Infirmary, and also that of House Surgeon to the Royal Maternity Hospital. He was then almost the only man who had held all three of these much-coveted posts. Among his colleagues and intimate friends while resident at the Infirmary were Sir Joseph Lister and Dr. Wilson Fox. Dr. Thorburn had the good fortune to be a student at that brilliant period in the history of the Edinburgh Medical School when Alison, Christison, Syme, Simpson, Goodsir, and Hughes Bennett were among the teachers,

and there can be little doubt that he is to be counted among the numerous pupils whose careers were directed by the influence of Sir James Simpson. He did not, however, take at once to the special work of his later life, but after leaving Edinburgh he came to London, and was for some time resident at the Brompton Chest Hospital. In 1858 he naturally returned to Manchester, where he had a wide circle of relatives and friends. After holding various appointments he founded, with Dr. Henry Simpson and others, the Southern Hospital for Women and Children, and in 1873 he was appointed Obstetric Physician to the Royal Infirmary, being the first to hold that appointment. In 1864 he began work as Lecturer on Midwifery in the Royal Medical School, and on the amalgamation of this in 1873 with the Owens College, constituting the Victoria University, he was appointed to the chair of Obstetric Medicine. His teaching here, like his practice, was characterised by the absence of eccentricity and affectation; it was marked by great clearness combined with moderation and judgment. In 1878 he took the Membership of the Royal College of Physicians, and in the beginning of May, 1885, was elected a Fellow. For the last two years Dr. Thorburn was engaged in preparing his work on 'The Diseases of Women.' By his experience and his turn of mind, he was peculiarly and exceptionally well qualified for such a task, and all who knew of his labour looked forward to his enjoying the well-deserved reward of a brilliant success. The most friendly anticipations would certainly have been fulfilled if he could have found more leisure, or if he had been in better health. As it was, there can be little doubt that the additional strain thrown upon him by such a laborious and long-continued effort had much to do with producing the final disaster. The heroic perseverance with which he applied himself to his task amidst the distractions of a busy professional life, the confident anticipations of rest as the work drew to a satisfactory conclusion, and the fatal illness just when his task was complete, and the book was issuing from the

press, lend an additional pathos to his premature death. Dr. Thorburn was probably a man without an enemy, professional or otherwise—a fact unusual in the history of men of strong character such as his. He became a Fellow of this Society in 1867, was on the Council from 1876 to 1878, was a Vice-President from 1881 to 1883, and was again on the Council at the time of his death. He did not contribute much to our 'Transactions,' but most of us remember his coming up in 1879 to take part in the discussion on the use of the forceps, when he showed a modification of Roberton's instrument, to which he had added a screw in the handles, designed to secure a closer apposition of the blades to the child's head. Those who saw him then, apparently in robust health, little thought how soon he would be removed for ever from the scene of his active and useful work. By his death the medical profession has lost one of its most accomplished and distinguished members, a skilful and successful operator, and a high-principled gentleman.

Here, gentlemen, I conclude these brief notices of our departed brethren. I feel how imperfectly I have fulfilled this part of my task, but as has been well expressed by one, himself a member of our profession, "The dignity of a silent memory is not to be undervalued. Who knows whether the best of men be known, or whether there be not more remarkable persons forgot than any that stand remembered in the known account of time? The greater part must be content to be as though they had not been; to be found in the register of God, not in the record of man."

Dr. Graily Hewitt moved, and Dr. West seconded, a vote of thanks to Dr. Potter for his interesting address, with a request that he allow it to be printed in the next volume of the 'Transactions.' This was carried with acclamation.

In seconding the proposition of Dr. Hewitt, Dr. West said that being himself one of the senior, in point of age,

among the Fellows of the Society present, he might, perhaps, be allowed to congratulate them on its continued prosperity and on the good work which it had done and had endeavoured to do. He congratulated them, not simply on what they had done for the promotion of their special branch of medicine, but also on the endeavours they had made to benefit society at large, and especially its poorer members, by instituting examinations of midwives and by trying to obtain from the Government the adoption of regulations to secure their possession of the knowledge needed for the safe exercise of their calling. His business, however, was to second the vote of thanks to their President; and for the opportunity of doing so he was indebted to two honours which the Society had conferred upon him, first in electing him an Honorary Fellow, and next in choosing him, some years since, as their President. To that he owed his present seat on the Council, where he had watched the conduct of their President in somewhat trying circumstances; and he had been struck with his uniform courtesy even to those from whom he most widely differed, with the clearness with which he stated his own views, and the judicial spirit in which he summed up the opinions of others. It remained for him only, in seconding the resolution, to congratulate the Society, not only on their prosperity, but on their President.

A vote of thanks to the retiring officers (Dr. Herman, Hon. Sec., and Mr. Knowsley Thornton), proposed by Dr. Gervis, seconded by Dr. J. Watt Black and supported by the President, was carried unanimously.

Dr. Gervis said it gave him particular pleasure to propose the resolution placed in his hands, offering the thanks of the Society to its retiring officers, Dr. Herman and Mr. Thornton. During his tenure of office as President it had been his good fortune throughout to have associated with him as Secretary, Dr. Herman, so that he was able to speak from much personal knowledge of the admirable

way in which Dr. Herman had performed the important duties which had devolved upon him, and the Society was very deeply indebted to Dr. Herman for the untiring energy and constant care he had devoted to its interests. Mr. Thornton's duties had been lighter, but the way in which he had attended to them was in accord with his great reputation, and was of good augury for his work in the more important position to which he had just been elected.

A vote of thanks to the retiring Vice-Presidents and to the retiring members of Council was moved by Dr. ROUTH, seconded by Dr. WM. A. DUNCAN, and carried unanimously.

In seconding Dr. Routh's vote of thanks to retiring Vice-Presidents and other members of Council, Dr. W. DUNCAN said, "It gives me much pleasure to second the motion proposed by Dr. Routh. As a member of Council, I can speak from experience as to the value of these gentlemen's counsels at the various meetings, and although we lose their help at the Council meetings, I trust we shall often hear them taking part in the discussions of the Society."

Mr. WORSHIP, in returning thanks, said, "Mr. President and Gentlemen, I beg, on behalf of myself and the retiring members of the Council, to express our thanks for the resolutions proposed. It has been a great pleasure and honour to be connected with the Council, and any trouble that we may have experienced in our attendance has been more than compensated by the courtesy we have always experienced."

MARCH 3RD, 1886.

J. B. POTTER, M.D., President, in the Chair.

Present—45 Fellows and 8 visitors.

Books were presented by Dr. Matthews Duncan, Dr. T. A. Emmett, Dr. Graily Hewitt, Dr. Madden, St. Bartholomew's Hospital Staff, The Faculty of Physicians and Surgeons, Glasgow, and the Medical and Chirurgical Faculty of Maryland, U.S.

Lewis Jones, M.D. (Balham), was admitted a Fellow of the Society.

Robert Alexander Jamieson, M.D. (Shanghai), and Zebulon Mennell, M.R.C.S. (Shepherd's Bush), were declared admitted.

The following gentlemen were elected Fellows of the Society :—William Profit Dukes, L.R.C.P. Ed. and L.M. ; Henry Trotter Rutherford, B.A., M.B. Cantab. ; and Patrick Watson Williams, M.B. Lond. (Clifton).

The following gentlemen were proposed for election :— Reginald Hartley, L.R.C.P. and S. Edin. (Thirsk) ; Herbert Henry Lankester, M.B. Lond. ; and William Edward Steavenson, M.D. Cantab., M.R.C.P. Lond.

TUBERCULOSIS OF FALLOPIAN TUBE.

By W. S. A. Griffith, M.B.

Dr. W. S. A. Griffith showed specimens of tubercular disease of the Fallopian tubes, with microscopic sections showing the bacilli.

PELLETS OF CORROSIVE SUBLIMATE.

Dr. Champneys showed, at the request of Dr. Fly Smith, some pellets for the ready preparation of antiseptic solutions.

Their composition was, Hydrarg. Perchlor. gr. 24, Ammon. Chloridi gr. 26. Make ten pellets.

1 pellet in a pint of water = 1 in 4000.
2 pellets in a pint of water = 1 in 2000.
4 pellets in a pint of water = 1 in 1000.

Dr. Matthews Duncan objected to the use of solutions of corrosive sublimate made with muriate of ammonia,* because when diluted, as in practice, with London water, the result was throwing down of white precipitate and an inert antiseptic. A convenient mode of carrying corrosive sublimate for antiseptic purposes in London, where the water was so impure with lime, was a solution of pure corrosive sublimate in glycerine. A drachm of this is made strong enough to produce four pints of the strength of 1 in 1000.

Note.—The addition of ammonium chloride to mercury perchloride forms a new double salt, ammonio-mercuric chloride, the *sal alembroth* of the alchemists, a compound with a definite composition and a definite crystalline form; the mercury perchloride is replaced by this; and, to the extent that this double salt is formed, the mercury per-

chloride disappears. The antiseptic properties of this double salt are unknown. The pure mercury perchloride is freely soluble in distilled or in common water, but *sal alembroth* (and the Liquor Hydrargyri Perchloridi, P.B.) with common water containing lime forms a white precipitate, viz. Hydrargyrum Ammoniatum, P.B., the antiseptic properties of which are unknown (see paper by Mr. Martindale, 'Pharmac. Journ.,' Feb., 1870).

It follows that ammonium chloride should not be used with corrosive sublimate for antiseptic purposes. Nothing is more convenient than a simple solution of corrosive sublimate in distilled or common water, 1 in 50, coloured with cochineal. One ounce of this in an imperial pint of water makes a standard solution of 1 in 1000 (F.H.C).

UTERUS REMOVED ENTIRE, ON MARCH 1ST., 1886, FOR PRIMARY MALIGNANT DISEASE OF THE BODY.

By A. H. N. Lewers, M.D. Lond., M.R.C.P. Lond.,
ASSISTANT OBSTETRIC PHYSICIAN TO THE LONDON HOSPITAL.

From a patient, æt. 56. Menopause occurred at 36. Has complained for last ten months of bleeding, violent pains in lower part of back and abdomen, also of an offensive discharge. Has been wasting for the same time.

The uterus weighs seven ounces. Owing to its size it could not be retroverted and brought through the opening in Douglas's pouch, fundus first, as ordinarily recommended. The vessels being tied and the cervix cleared as high as the level of the internal os, the remaining part of the broad ligament on each side was transfixed and tied in two halves, and the uterus (if one may use the expression) delivered cervix first, fundus last.

In reply to Mr. Knowsley Thornton, who pointed out the existence of a nodule in the cervix, Dr. Lewers said

that the nodule in the cervix is not in the line of the lateral incisions, but projects from the posterior aspect of the cervix.

It would certainly have been desirable to cut wider of the nodule than was actually done. At the same time no diseased tissue could be felt in the raw surfaces remaining after the uterus was removed.

The patient is (March 9th) doing remarkably well, the temperature having been normal for the last three days.

(*Note.*—No return five weeks after operation.)

SCALE FOR CALCULATING ONSET OF LABOUR.

By Dr. Playfair.

Dr. Playfair exhibited a sliding scale by which the probable date of delivery, or any date between conception and delivery, could be at once read off.

MONSTER.

By Clement Godson, M.D.

With Dissection, by D'Arcy Power, M.B. Oxon., F.R.C.S.

Dr. Godson showed a monster belonging to the order "*double syncéphalien*," genus *Iniops* (Geoffroy Saint-Hilaire). It had been sent to him that day by Dr. Alfred Robinson of Rotheram, who stated that the presentation was footling and that there was no difficulty in the delivery. In Rokitansky's 'Handbook of Pathological Anatomy' was a drawing of a monster exactly similar in every detail. The specimen was a rare one.

Mr. D'Arcy Power, Curator of the Museum of St. Bartholomew's Hospital, dissected the specimen and described it as follows :

Female twin fœtuses, united by their faces along the median line and by their thoracic laminæ above the umbilicus. They constitute the variety of homologous union known as Iniops.

The faces are fused in such a manner that two lateral faces are formed out of four halves ; of these faces one differs from that of an ordinary infant only in its greater breadth, whilst the other is a mere rudiment. The less developed face has a median eye, above which is a kind of proboscis measuring two thirds of an inch in length. Beneath the eye is a papilla of skin with a small central aperture, through which a probe can be passed into the mouth of the opposite face. Beneath this papilla and aperture are two ears fused by their lobes, but otherwise distinct. The other two ears are separate and bear their normal relation to the well-formed face.

The brain, like the faces, is fused, but it is not in a condition to admit of a detailed examination.

The skulls are fused in the basisphenoidal region so that the anterior cerebral fossæ are absent.

In the thorax are two pairs of lungs situated laterally, one pair in each thoracic cavity ; they appear to be normal and have the ordinary blood supply.

There are two hearts, one situated in each thoracic cavity, each being enclosed in its own pericardium.

The heart belonging to the left fœtus is imperfect. It consists of a single, large, left ventricle with a complete auricle, and a small, ill-developed right ventricle with a minute right auricle. The larger ventricle gives off the pulmonary artery and the aorta. From the aorta three large branches arise, the first at the junction of the ascending with the transverse portion ; this branch is the right subclavian for the right fœtus. The second branch comes off from the transverse portion of the arch ; it soon divides into the two common carotids for the right

and left sides of this aspect of the monster, whilst the third branch is given off immediately beyond the ductus arteriosus ; it forms the left subclavian artery of the left fœtus.

The heart lying in the thorax corresponding with the less developed face chiefly supplies the right fœtus ; it is normal, consisting of two ventricles and two auricles with the aorta and pulmonary artery arising from it as usual. The arch of the aorta gives off two branches, of which the first almost immediately divides into a right and left common carotid, whilst the second, given off immediately beyond the point where the recurrent laryngeal nerve winds round the aorta, is the left subclavian artery of the left fœtus.

In the abdomen the two kidneys are partially fused on either side.

The upper portion of the small intestines is united as far as a point twelve inches above the ileo-cæcal valve. This point of union is situated immediately above the persistent omphalo-mesaraic duct.

The stomach is single.

The spleens and adrenals are double and not fused.

The specimen is No. 3410 (*a*) in the St. Bartholomew's Hospital Museum.

NOTES OF A CASE OF GESTATION IN ONE HORN OF A UTERUS BICORNIS UNICOLLIS.

By H. Campbell Pope, M.D.,

With notes of the specimen by W. S. A. Griffith, M.B.

A. M—, æt. 27, married three years, one premature confinement at seven months. Consulted Dr. Pope, when three months pregnant, for pain in back and left side, with slight blood-stained discharge from vagina and rectum, indicating threatened abortion ; these symptoms subsided in about three weeks.

During his absence she consulted his representative on August 20th for constipation and violent abdominal pain.

Dr. Pope saw her on the 21st; she was suffering from acute peritonitis and was moribund. The fœtus was easily felt in the abdomen, and he guessed the nature of the case.

At the *post-mortem* examination there was found general acute purulent peritonitis, with recent lymph, indicating chronic peritonitis culminating in an acute attack.

The sac was unruptured.

Description of the Specimen.

The specimen consists of a uterus, having its appendages normal on the right side, and a gestation cyst (containing a fœtus of about the seventh month) attached to the left upper angle of the uterus. From the lower part of the anterior surface of the cyst hang the left appendages, which appear to have no direct connection with the uterus.

The uterus, which is slightly flattened on the left side, measures four inches in length by two and a half in breadth, its cavity is two and a half inches long by one and a half broad by half an inch deep, and contains a hollow triangular mass of decidua, adherent only by its base to the fundus, the separation of the remainder being evidently quite recent; each layer of this varies in thickness from an eighth to a quarter of an inch. The cervix measures one inch in length.

The gestation cyst is connected to the left side of the uterus by a pedicle one and a quarter inches in length, which differs in appearance and structure from any normal condition of this part; it is fleshy and consists of a mass of sinuses, which convey the principal blood-supply to the cyst. After most careful search no channel of communication can be found between the uterus and cyst.

The cyst, empty and contracted, measures eight by six inches, its walls are extremely thin and are formed chiefly by the fœtal membranes, a large placenta (seven inches in diameter) is adherent to the upper and posterior wall, and

the cord has a membranous insertion two inches from its lower edge.

The left appendages, apparently normal, spring from the anterior surface of the cyst; the Fallopian tube on this side measures six inches in length and is one inch longer than the right tube; owing to the development of the cyst and membranes it is impossible to trace the communication between it and the cyst.

No recent corpus luteum was found in either ovary.

Report of the Committee appointed to Examine the Specimen.

This specimen has been carefully examined and the definition already given to it appears to be accurate.

The uterus is more nearly symmetrical in form than in the cases of this kind previously reported by Kussmaul, 'Von dem Mangel, der Verkümmerung und Verdopplung der Gebärmutter,' 1859, and Turner, 'Ed. Med. Journal,' vol. xi, p. 971, and a specimen of this kind in the Museum of St. Bartholomew's Hospital, in which the non-gravid uterine cavity clearly consisted of one uterine cornu.

The tissue of the pedicle appears to be similar to that of the uterine walls, but the sinuses are relatively larger and the muscular tissue less abundant. The pedicle is remarkably thin, considering that it and the cyst form part of the left cornu of the uterus. It does not contain a trace of any structure resembling a Fallopian tube.

The manner of impregnation in this case, which must have taken place through the right tube, is remarkable, but the possibility of a phenomenon of this kind has been already proved.

The channel of the left duct of Müller must, at an early stage of development, have become obliterated at the point now represented by the pedicle.

G. Ernest Herman.
Alban Doran.
Walter S. A. Griffith.

UTERI AT THE ONSET OF LABOUR AND AFTER DELIVERY.

By A. H. F. Barbour, M.D.

Dr. Barbour showed a series of sections demonstrating the anatomical changes in the uterus in connection with labour. They were arranged in three groups : (1) from a case of death at *the commencement of labour ;* (2) from four cases of Porro's operation, which throw light on the changes *in the third stage ;* (3) from two cases of death *post-partum.*

1. From a case of death at *the commencement of labour.* This case presented the following *clinical* features :—The patient, a V-para, died at full time from acute enteritis. During the twelve hours before death she had some labour pains and the os dilated till it admitted three fingers. The fœtus lay with the head in the transverse diameter and the occiput to the right side. The head was low down in the pelvis and both fontanelles were equally accessible. No fœtal heart nor movements could be detected, nor had the latter been felt for a few days.

The sections exhibited were (1) a *vertical mesial* one ; (2) a *horizontal* one passing through the *third lumbar vertebra,* and showing the moulding of the uterus on the spinal column and the position of the ureters ; (3) a *transverse* one passing through the *second sacral vertebra* and at right angles to it, which showed the relation of the uterus and fœtal head to the back wall of the pelvis ; (4) several *axial coronal* sections, showing relations of peritoneum, cellular tissue, and ureters. Coloured tracings of the frozen sections were shown, as well as the preparations themselves, mounted in glycerine jelly.

After referring to the other three published sections illustrating the changes in labour (those of Braune, Chiara of Milan, and Chiari of Prague), Dr. Barbour drew atten-

tion to the value of frozen sections, but at the same time said due allowance must be made for *post-mortem* changes due probably to the cessation of the circulation and the loss of tone in the tissues, as well as for the changes due to the posture in which the cadaver was frozen.

In these sections the chief points of interest were the remarkable thinness of the lower uterine segment, the course of the ureters, and the disposition of the peritoneum and cellular tissue. The horizontal and coronal sections, made in this case for the first time, gave important information on these points.

2. From four cases of *uteri obtained from Porro's operation.* These sections were prepared by placing the uterus, after its removal, in spirit, and embedding it in paraffin; the sections were mounted in glycerine jelly. Three of these sections have been already published, and the fourth confirms the observations made in the others. They show that after the fœtus and liquor amnii are removed the uterine wall contracts and its area diminishes. This diminution in area affects the membranes and the placenta differently. The former are crumpled up and partially detached, the latter is not separated. These sections, therefore, show that the area of *the placental site may be diminished to four inches by four inches without the placenta becoming separated.* Of course, great caution is necessary in reasoning from a mutilated Porro uterus to the physiology of the third stage; still these sections favour the view that the placenta does not become separated till it is grasped on all sides by the uterus, and that it is therefore separated by detrusion. The non-existence of a cavity or space into which the placenta might bulge, and the absence of any indication of hæmorrhage between the placenta and uterine wall, go against the mode of separation of the placenta described by Baudelocque and Schultze, and recently advocated by Ahlfeld. These sections bear out the description of the mode of the expulsion of the placenta so lucidly demonstrated many years ago by Dr. Matthews Duncan. In all of them, the placenta was

situated on the anterior or posterior wall. Whether when the placenta is situated over the fundus it is expelled in the mode described by Schultze, and with a retro-placental hæmatoma, is left *sub lite* till such a specimen has been described. A section showing a retro-placental hæmatoma (in which the patient died from hæmorrhage) with partial inversion of the uterus was also shown.

3. *Post-partum uteri.*—Sections of two cases of death, (*a*) one and a half hours post partum (from hæmorrhage), and (*b*) thirty-six hours (from eclampsia), were exhibited and the naked-eye and microscopic features described. Of the former, the most noteworthy was the large amount of cellular tissue between the cervix and bladder. The character of the epithelial lining of the vagina, cervix, and uterus, as well as the changes in the blood-vessels of the placental site, were also referred to and illustrated by microscopic sections.

Dr. Matthews Duncan was astounded at the excellence and amount of good and original work that Dr. Barbour had laid before the Society. He (Dr. Matthews Duncan) would remind them that it was 112 years since William Hunter had published his crowning work on the gravid uterus. When he was a student, and after that, this great work was regarded as finishing the subject. But since then, sectional or homolographic anatomy had been much pursued, and especially by the freezing method in which Pirogoff had done so much. The result had been much important addition to our knowledge of the gravid uterus and its relations. But since the student days of most of our fellows a new department of medical science had sprung up, through the frozen section method, as a sequence to the anatomy of pregnancy, namely, the anatomy of labour, and it was in this new department of medical science that Dr. Barbour had so greatly succeeded; and his great novelty was the anatomy of the first stage of labour as exhibited this evening. Dr. Barbour's good fortune in being the first in the world to get a body frozen in the first stage was great, but it was exceeded by the curiously great luck of Chiara in his body with spontaneous expulsion; his specimen looked almost as if there were more than mere luck in the matter. He (Dr. Matthews Duncan) would wish to carefully insist on the erroneous nature of a prevalent impression as to the unquestionable accuracy of frozen sections as a display of conditions during life. They were very far from being so, and

this detracted a little from their otherwise very great value. Some of the misleading was really gross and plain, as by Braune's well-known plate of the anatomy of the second stage of labour—a magnificent and valuable work. Errors or misleading were plain, as in the position of the bowels and the uterus, and especially the state of the perineum, or of all the parts below the antero-posterior diameter of the outlet. Barbour had remarked on similar misleading in his sections, and he would specially notice the dip of the peritoneum behind the uterus, and, still more, in front when it came down, with the fundus of the bladder, to below the lower border of the symphysis pubis. On account of the pressure of time, Dr. Matthews Duncan would not yield to the temptation of following Dr. Barbour in his placental researches, and especially in his theory of the separation of the placenta by detrusion, not, as generally held, by shrinking of the placental site. This novel theory Dr. Matthews Duncan was reluctant to adopt. He knew it was now regarded as objectionable, unphilosophical, to use final causes, or object, or aim, as argument for a theory, yet he would dare to express his strong liking for the shrinking-site theory, because it combined the function of separation and that of the arrest of hæmorrhages, a grand object in the third stage. Everything having any connection with flooding was of supreme interest, and therefore he hoped to see Dr. Barbour's views thoroughly scrutinised. One great little fact he had pointed out, namely, the persistent attachment of the placenta in one of his sections, while the placental site was reduced, or it had shrunk to an area four inches in diameter.

Dr. Champneys said that, while greatly admiring Dr. Barbour's work and the beautiful specimens which he had shown to-night, he could not refrain from expressing his dissent from some of the conclusions drawn from the specimens of uteri removed by Porro's operation. From a study of these uteri, and the descriptions of them which have been published, he was sure that we must be very cautious in accepting inferences from them as illustrating the physiology of the third stage of labour; indeed, such inferences can only be drawn where the processes illustrated by these preparations can be shown to be consonant with the clinical course of the third stage of labour. For instance, in these preparations the uterus is small, flattened from before backwards, and yet the placenta is entirely adherent. In nature, at the end of the second stage of labour, the uterus, as we all know, is not flat and reaches about up to the navel. Now, Lemser, who examined 168 women with the entire hand immediately after the birth of the child, found in practically all cases that the placenta was entirely detached. If the placenta is entirely detached under these conditions, in a uterus of the above size and shape, and, on the other hand, is entirely

adherent in a uterus which is smaller in all respects, it follows that the processes are not correctly illustrated by uteri removed by Porro's operation. Dr. Barbour again says that these preparations prove that at the beginning of the third stage of labour there is no uterine cavity. The facts above quoted seem to show that here again uteri removed by operation do not illustrate the facts of nature, for the shape of the uterus at the beginning of the third stage of labour negatives the idea that it contains the placenta alone, lying flat against both uterine walls, as in the preparation. The theory of detachment of the placenta, not by diminution of the placental site, but by what may be called a process of "detrusion," was advocated by Lemser, who made experiments on pregnant rabbits. This theory must be accepted with caution on such grounds as the above, for although it is true that the human female and the rabbit both have discoid placentæ, that is about as much similarity as can be proved, the structure of the placenta, not to mention the structure and shape of the uterus, widely differing. Dr. Barbour, if he understood rightly, accepted this theory not on the above grounds, but arrived at it by a process of elimination of the other theories. He thought this theory of detrusion had no direct evidence in its favour, and was hardly conceivable, except in placental attachment to the front and back walls, if Dr. Duncan's diagram and description are to be accepted. The mode in which the placenta presents at the os uteri is an indispensable test of the correctness of views as to its mode of separation, and on this point he hoped to lay his own observations shortly before the Society.

A CASE OF CIRCUMSCRIBED SARCOMA OF THE VAGINA AND UTERUS.

By A. H. N. Lewers, M.D. Lond., M.R.C.P. Lond.,
ASSISTANT OBSTETRIC PHYSICIAN TO THE LONDON HOSPITAL.

E. L., æt. 50, married twenty-nine years, eight children, the last eleven years ago, no miscarriages, was admitted to the London Hospital, June 27th, 1885. She complained of having had a sudden attack of flooding about a month ago, it lasted an hour and she lost a pint of blood. Two days after she had another similar attack; since then she was confined to bed till she came to the hospital. She once tried to walk across the room about a week after the second attack of bleeding, but the exertion was immediately followed by a third flooding. After each flooding she fainted and vomited, but the attacks were not attended by any pain. She has been losing flesh the last three months, and for the last three or four months has had a watery discharge from the vagina of a "dirty" colour. A month ago (that is, about the same time the flooding came on) she noticed a lump protruding from the vulva.

Previous history.—Patient began to menstruate at sixteen; she was quite regular till her marriage; the flow lasted a week, and she had no pain at her periods. During the last nine years patient says she has had altogether six attacks of profuse flooding; the one which began a month ago is the sixth. The *first* attack of bleeding occurred nine years ago and confined her to bed for five weeks. The *second* attack was three years after this. Between the attacks patient says she was quite regular.

Present condition (June 29th, 1885).—*Vulva*.—On inspection, without separating the parts, a greenish-black mass is seen between the labia majora posteriorly. By separating the labia the mass is seen to be oval, with its long diameter from before back, measuring $1\frac{5}{8}$ inches; transversely 1 inch.

The exposed surface of the mass is indistinctly divided by radiating furrows into three lobes. On tracing it up, the mass is found to be attached to the posterior vaginal wall by a broad pedicle, which extends downwards as far as the posterior edge of the vaginal orifice.

The part of the tumour that is within the vagina is covered by vaginal mucous membrane of a pale pink colour, like that elsewhere in the vagina. But this covering ceases abruptly where the mass is exposed to the air, and, as already mentioned, the surface of the exposed portion is greenish black.

Per rectum no pouching of the anterior rectal wall into the mass is to be felt, thus showing that the tumour is not a sloughing rectocele. About half an inch up the vagina, on the right side, a second mass the size of a walnut is to be felt beneath the mucous membrane. At the most prominent part of this mass is an area the size of a threepenny-piece, of a dark purple colour. Here the vaginal mucous membrane has become attached to the subjacent growth and has ulcerated. Elsewhere the mucous membrane covering the tumour is normal. The mass has an elastic semi-fluctuating feeling.

Uterus.—The condition of parts in the vagina interferes with a satisfactory examination of the uterus, but it feels heavier than normal and is freely moveable.

The temperature since admission has varied from normal to 100·4°. Patient is thin and sallow; her general appearance suggests malignant disease. A gland can be felt in each groin, but neither of them is enlarged.

My colleague, Dr. Herman, kindly saw the case with me, and it was agreed that it was desirable that the growths should be removed. Accordingly, on July 2nd,

1885, this was done, and after their removal (which was easily effected) a careful examination was made, the patient being still under the influence of an anæsthetic.

The uterus was freely moveable; its surface appeared smooth and free from any irregularity. The sound passed three and a half inches without causing any bleeding.

After the operation the patient had an attack of septicæmia, from the effects of which she sank on July 7th.

Post-mortem.—Three distinctly circumscribed growths, of a deep red colour and soft consistence, were found in the walls of the uterus. The largest occupied the thickness of the uterine wall at the fundus. It measured vertically $1\frac{3}{4}$ inches, and horizontally $2\frac{1}{2}$ inches. The peritoneal surface of the uterus opposite this growth was discoloured and of a purple tint, but was quite smooth. The lowest growth was partly in the wall of the cervix, partly in that of the body of the uterus. There was no peritonitis. There were numerous secondary growths about the size of peas, but individually varying considerably in size, in both lungs. None elsewhere. The kidneys were granular.

The drawings shown were made the next day by Mr. Burgess.

Microscopical examination of the growths showed that they were mixed round- and spindle-celled sarcomata.

It will be seen that *clinically* the case was one of sarcoma of the vagina. The growths in the vagina were the only ones that could be recognised during life, and their removal seemed to offer the patient a fair chance (as in Spiegelberg's case) of permanent recovery.

From the *post-mortem* examination it is not quite certain whether the uterine or the vaginal growths were primary. Looking, however, to the fact that the sloughing vaginal growth which protruded (which was evidently older than the other a little higher in the vagina) had only attracted attention a month before admission, and to the fact that the patient had suffered from time to time

during the past nine years from attacks of flooding, it seems on the whole probable that the growths in the uterus preceded those in the vagina.

On the other hand, too much stress should not be laid on the history of hæmorrhages, as the patient had had eight children, and subinvolution would sufficiently explain their occurrence.

The largest of the growths in the uterus was larger than the one protruding from the vulva, and altogether it seems more likely that the uterine disease preceded the vaginal.

It should be mentioned that there were neither symptoms nor signs pointing to disease of the lungs, though the post-mortem examination showed that the secondary growths in these organs were very numerous.

Dr. GERVIS referred to a case of sarcoma of the vagina which had recently been under his care, in which he had already operated three times, at lessening intervals, but, on account of its attachment to the posterior wall of the vagina and the posterior fornix, with little prospect of ultimate success. The uterus was healthy, but on each occasion it was found that the tumour, although springing from the vagina, had contracted adhesions to the cervix. It was a good specimen of small round-celled sarcoma.

Dr. HORROCKS mentioned a case of sarcoma growing from the uterus, which he had removed several times, each successive interval being shorter. Dr. Braxton Hicks and Dr. Galabin had also operated several times on the same case, the patient having suffered from the disease for over eleven years. Hence these sarcomata were not always very malignant in their clinical features, although, like sarcomata in other regions, they were very apt to recur. He mentioned another case he had seen that day, in which a sarcoma of the ovary had been removed successfully some months ago, but recurrence had taken place, and now a tumour, probably sarcoma, was projecting through the os, and another at the umbilicus.

Dr. WILLIAM DUNCAN thought it was quite a matter for consideration whether cases of sarcoma of the vagina and uterus should be operated on, and he certainly considered that every patient should be informed of the gravity of her case and the improbability of a radical cure being effected, and that then she should be allowed to decide for herself. Dr. Duncan mentioned a case which he saw over a year ago, and in which, on placing the matter fairly before his patient, she decided against having

any operation performed, and that she is now practically *in statû quo ante.*

Dr. M. HANDFIELD-JONES quoted a case which had occurred in his out-patient department at St. Mary's Hospital. A large growth was removed from the anterior vaginal wall of a young girl aged sixteen. Microscopical examination showed the mass to be a round-celled sarcoma. Though six years had elapsed since the operation, there had been no return of the growth, and the patient's health was sound. He was inclined to think that when these growths were recognised and removed at an early stage, there was a reasonable prospect that they would not recur.

Dr. ROUTH said it appeared to him that the mere removal of these sarcomatous tumours was not after all the most essential part of their treatment, but the destruction of the tissue in which they grew. Their removal was a very simple process, except in those cases where they were small, and where from the extreme mobility of the vagina (especially if high up) their prehension and dissection was very difficult. The prevention of this recurrence was the problem to solve. Now, he remembered a case, he thought it was one under the care of the late Dr. Kennedy, in which three tumours of this kind were removed from the uterine cavity, and three times the tumour recurred, until he freely burnt the tissue in which they grew with strong nitric acid and the tumours did not again recur. Dr. Gervis had spoken of a paste which he had used. He should have liked to know its composition. The only two agents on which he (Dr. Routh) relied were nitric acid and bromine, and with these, the latter especially, he had been able to prevent their recurrence. Where the tumour was exclusively in the vagina it might not be always possible to destroy the surface deep enough, lest a fistula should result when the slough came away, but an attempt in this direction should be made as far as practicable, else the tumour would certainly recur, and that even more rapidly than before, and so only temporary benefit would be obtained and no permanent cure.

Dr. LEWERS (in reply) said—It is fairly certain that the case was one of primary circumscribed sarcoma of the uterus, and not, as was thought during life, primary sarcoma of the vagina. This being so, it is clear that the only operation that would have offered any chance of permanent, or even prolonged temporary, relief, would have been extirpation of the whole uterus at a much earlier period of the patient's career. At the same time it was impossible to say during life that the nodules in the vagina were not the primary, and perhaps the only growths, and, particularly as they were distinctly circumscribed, I think it was right to remove them.

APRIL 7TH, 1886.

J. WATT BLACK, M.D., Vice-President, in the Chair.

Present—47 Fellows and 5 visitors.

Books were presented by Dr. Galabin, and the St. Thomas's Hospital Staff; Dr. Braxton Hicks presented some tracings of cephalotribes.

Henry Trotter Rutherford, B.A., M.B. Cantab., was admitted a Fellow of the Society; and Patrick Watson Williams, M.B. Lond. (Clifton) was declared admitted.

The following gentlemen were elected Fellows of the Society:—Reginald Hartley, L.R.C.P. and S., Edin. (Thirsk); Herbert Henry Lankester, M.B. Lond.; and William Edward Steavenson, M.D. Cantab.

The following gentlemen were proposed for election:—John W. Byers, M.D. (Belfast); Charles Owen Fowler, M.D. (Brussels); and Fourniss Simmons, M.A., M.B. Edin. (Egremont).

NAEGELE PELVIS.

By W. S. A. GRIFFITH M.B., F.R.C.S.

DR. W. S. A. GRIFFITH showed a specimen of the Naegele pelvis which he believed was the first perfect specimen in London. The history of the case, with a descrip-

tion and detailed measurement, was given. The appearance of the specimen was in agreement with the history of the patient that the deformity was congenital. Dr. Griffith said that a diagnosis of this deformity during life might always be made, by comparing the measurements taken between the posterior superior spines and the anterior superior spines of the opposite sides, an inch difference between the two sides being found only in these cases. The specimen which Dr. Champneys had exhibited was practically identical with this one, allowance being made for the difference of age and of the corresponding development, his being that of a child. In neither case was there, in Dr. Griffith's opinion, evidence of caries.

NOTES OF A SPECIMEN OF THE OBLIQUE PELVIS OF NAEGELE.

By W. S. A. Griffith, M.B., F.R.C.S.

The patient from whom the pelvis was taken died in St. Bartholomew's Hospital from peritonitis on the eighteenth day after delivery by craniotomy. The midwifery assistant found the vertex presenting in the first position, and after ineffectual attempts to deliver by the forceps, craniotomy was performed, and he delivered by the crotchet. Peritonitis supervened on the third day, and she was admitted under Dr. Duncan's care, but was too ill to allow of any minute examination of the pelvis. Her age was twenty. She had been married three years, and had twice been delivered by perforation of the after-coming head, at the City Road Lying-in Hospital.

No history of any disease during infancy or childhood could be obtained from her friends, and neither she nor her friends suspected that she had any deformity.

The specimen consists of the pelvis and two lumbar

Oblique Pelvis of Naegele.

FIG. 1.

FIG. 2.

vertebræ, they are rather small, but are solid healthy bones; the epiphyses are not completely united.

The synostosis is on the right side, therefore the left oblique is shorter than the right oblique diameter. The right side of the pelvis is flattened and the pubes is displaced to the left side, or rather, is opposite the left ala of the sacrum.

The right ala of the sacrum is imperfectly developed, the right ilium is united to the three upper segments of the sacrum corresponding to the normal articulation on the left side. There is no sign of a joint below or in front, but above and posteriorly the line of junction is distinct.

The anterior and posterior sacral foramina on the right side are narrower than on the left side.

The sacrum, instead of facing forwards, is turned somewhat to the right.

The right sacro-sciatic notch is smaller than the left.

The symphysis pubis is opposite the middle of the left ala of the sacrum, the right pubes is posterior to the left. The right half of the linea innominata is nearly straight, and has a sharp cutting edge.

TABLE OF MEASUREMENTS IN INCHES.

Brim.		*Outlet.*	
Conjugate	3·75	Antero-posterior (to apex of sacrum)	5·
Oblique, right	4·25	Transverse	3·75
„ left	3·	Pubic angle	71°
Transverse	3·75		
Right sacro-cotyloid	2·		
Left „	4·		
Right sacro-pectineal	3·5		
Left „	1·5		

Sacro-sciatic notch, right	1·75
„ „ left	2·

External Measurements.

External conjugate	.	7·25		
Crests	. .	8·5		
Spines, anterior	.	8·		
„ posterior (inside)		1·5		
Left posterior superior spine			to right ischial tuberosity	6·
Right „	„		left „	. 7·
Left „	„		right anterior superior spine .	. 6·5
Right „	„		left „ „	. 7·5
Left „	„		left „ „	. 6·
Right „	„		right „ „	. 5·70

Dr. Champneys thought that the front of the right ala of the sacrum was so rough as to suggest disease at some time or other. The bone in the neighbourhood showed several bosses which were not seen on the other side, and there seemed to be part of the joint persisting. There was dwarfing of the whole side of the sacrum, but also of the coccyx, illustrating the effect of disuse on growth.

Dr. Herman said that he did not think the smallness of the ilium on the side of the ankylosis was due simply to defective development, because there was no ossific centre, the absence or non-development of which would account for the deficiency of the part of the ilium which should bound the sacro-sciatic notch behind its apex. If changes such as those in this pelvis were met with in a subject known to have been ill during early life, it would be concluded that the illness was caries, and he therefore thought that where there was no such history, the supposition of intra-uterine caries was a reasonable one; but it was a supposition only, there was no proof. Naegele did not advance any theory about the nature of the disease beyond that it was congenital.

CHILD WITH DEFORMED HAND AND FOOT.

By John Phillips, M.B.

Dr. John Phillips showed a living child with deformity of the right hand and left foot. The phalanges of the index and second fingers were united to form a large first finger. Fusion of the corresponding metacarpals appeared to be doubtful. Full extension of the second on the first phalanx of the third finger was prevented by a ligamentous band.

The third toe of the left foot was in an undeveloped condition, and was about half the size of the corresponding one on the right foot. The mother was aged twenty-nine years, and the patient the fourth child. There was a totally negative history of deformity in the family, and no record of any maternal impression received during the second month of pregnancy, that is about the time the extremities are formed.

HÆMATO-SALPINX COMPLICATING OVARIAN TUMOUR.

By Dr. John Phillips for Dr. Playfair.

Dr. John Phillips showed (for Dr. Playfair) a specimen of hæmato-salpinx complicating ovarian tumour removed from a lady aged thirty and the mother of several children. She was first seen three weeks before the operation, and a right ovarian tumour about the size of a cocoanut was discovered. Five or six days afterwards she was seized with acute pain in the abdomen, accompanied by sickness, tympanites, and the general symptoms of peritonitis (simulating twisted pedicle). The local condition subsided in six or seven days, and a

coloured discharge, apparently menstrual, appeared for seven days. At the operation several large clots were found in the posterior *cul-de-sac;* the tumour contained much black clot, and the Fallopian tube was completely distended with blood. A patch of adhesion between the tumour and the transverse colon, the size of half-a-crown piece, bled freely, which only ceased on the application of Paquelin's cautery. The patient suffered severely from collapse for thirty-six hours, but otherwise made an easy and rapid recovery.

The tumour was ovarian, biloculated, with considerable thickening of the walls in two or three situations.

Dr. HORROCKS pointed out that although the Fallopian tube contained blood, it was little, if at all, distended. He asked whether the pedicle had been found actually twisted at the time of the operation, and whether the sanguineous flow from the uterus before operation was the menstrual period, and if so had it recurred at its proper time.

ON CONTRACTION, INHIBITION, AND EXPANSION OF THE UTERUS.

By J. Matthews Duncan, M.D.

In the following remarks I purpose to keep in view chiefly the uterus proper, or its body. With a view to contrast and elucidation I may, in some places, refer to the condition of the cervix uteri. I know nothing of contraction or other activity of the vagina. Its muscular coat, and its hypertrophy in pregnancy, suggest utility; and, no doubt, there is of it contraction and retraction; but I have only very rarely felt slight local contraction of the vagina proper, giving rise to a feeling of temporary stricture.

Contraction is the product of contractility, a function of unstriped muscular fibre. It is temporary, followed by relaxation and return to original dimension. It may be morbid in force, as for example, too weak or too strong; it may be morbid in duration, as for example, too short or too long; it may be morbid in rhythm or regularity of recurrence; and it may be morbid in extent or diffusion. Tonic or tetanic implies morbid length of duration, and generally also morbidly great force. Spasm or cramp, ill-defined terms, imply morbidity of contraction in respect of force, duration, regularity or extent. The variations of extent or diffusion of contraction may be of two kinds; first, and often easily ascertained, the region or part or area of uterine wall implicated; and second, and never thoroughly ascertained, the number of fibres, or the special layer or layers of fibres, within any region or area, that is implicated. Force may depend on largeness or

area of activity or upon the degree of contraction of the active fibres, or upon the number of the active fibres.

Pain accompanies great force and is in proportion to it, but we do not here consider this, as it is an epiphenomenon.

We know nothing of the uterine contractions which probably occur in childhood, while the uterine body is smaller than the uterine cervix; and we know nothing positively or directly of the contractions of the healthy unimpregnated uterus, though the analogy of the lower animals leads us to believe that they regularly occur.*

It is asserted, as by Rindfleisch,† that clonic contractions occur during healthy menstruation, and it must be recollected that menstruation begins long before the uterus is fully developed, "Direct proof," says John Williams,‡ "of uterine action taking place during menstruation, it is not possible to obtain, but that it does take place can hardly be doubted, because the cavity of the uterus, when menstruation is over, though larger than usual, is smaller than it would be after removal of its lining membrane had not contraction taken place; and because, in some of the uteri examined by me during the menstrual flow, the muscular wall was pale, though the mucous membrane, the surface immediately under the peritoneum, and the broad ligaments, were greatly congested, the blood having been driven by contraction of the muscular wall to the superficial vessels." I introduce this quotation at this place, though the action is rather of the nature of retraction as distinguished from contraction.

The profession generally is made aware of the occurrence of uterine contractions, in an otherwise healthy unimpregnated organ, by their exciting the pains of spasmodic dysmenorrhœa; for it is universally held that

* For some interesting relative remarks, see Bumm, 'Archiv für Gyn.,' Band xxiv, S. 42.

† 'Manual of Pathological Histology' (Sydenham transl.), vol. i, p. 408.

‡ 'Obstetrical Journal of Great Britain and Ireland,' vol. ii, p. 764.

these intermitting pains are spasmodic or produced by muscular contraction. Such contractions are clonic and they vary in frequency, six in an hour being a common number; or they may be tonic, as judged by the pain having no interruption or very imperfect intermission. These painful uterine spasms may be single and last for a part of a minute, or they may be numerous and recur for several, as for three, hours.

It is highly probable that contractions, almost or altogether, cease in the atrophied uterus of old age.

While it has been asserted, and is probable, that contraction takes place in the substance of a uterine fibroid, it is certain that regular contractions do take place in some, and probably in all, uteri containing fibroids. In a soft, embedded fibroid, of sufficient size, they can be distinctly felt, as in a pregnant uterus. They have been counted, occurring at the rate of from three to six in a minute. They cause changes in the uterine souffle if present. They may help to expel a fibroid from the walls of the uterus or from its cavity; and, in so doing, they may help to produce uterine inversion.

It is interesting, with a view to the corroboration of the theory of spasmodic dysmenorrhœa, to observe that contraction in a uterus containing a fibroid, is specially active during menstruation. It is then, that is, during menstruation, that a woman feels those dysmenorrhœal pains which afflict those affected with a fibroid; and it is then that a fibroid is expelled from the uterus. Remarkable cases I have observed where, during successive menstruations, a fibroid was expelled into the cervix or into the vagina, and again withdrawn into the uterine cavity as menstruation ceases.

It is believed, and it is asserted by Tarnier, that contractions take place during the whole continuance of healthy pregnancy. In advanced pregnancy they are easily felt, and they can be excited by cold, or by mechanical irritation, as in practising abdominal palpation. They may be counted as occurring from three to six times in an

hour. They have been described by Jacquemier,* Oldham, Dubois and Pajot, Litzmann, Hicks,† Tarnier, and many others. They have been called painless or latent. We are especially indebted to Dr. Braxton Hicks for a study of these painless pains and for interesting and valuable speculations on their utility in promoting the circulation of blood in the pregnant uterus.‡

The contractions of pregnancy may be morbid. Sometimes they are felt as painful, and this is unnatural or morbid. Sometimes they are tonic or long continued, the uterus remaining hard for several minutes. They appear sometimes to cause accidental hæmorrhage, as Gendrin has pointed out. When they have this evil consequence they must be spasmodic, and confined, chiefly if not exclusively, to the placental site; for we know that the most violent general contractions, as in labour, even when occurring after a considerable amount of retraction has taken place, do not separate the placenta. There is, however, no difficulty in imagining a contraction limited to the placental site and its resulting in separation of the placenta, partial or complete.

The chief morbid condition of the contractions of pregnancy is pain, and this morbid condition is not very uncommon. It must be distinguished from that attending those painful contractions which form the commencement of abortion, miscarriage, or labour at term. At such times contractions are naturally painful. No doubt, when painful contractions occur, they are at first, and justly, regarded as indicating the approach of abortion, miscarriage, or labour; but such contractions are not the contractions of pregnancy which we are at present considering. The following cases illustrate the painful contractions of pregnancy.

T. S—, æt. 26, an intelligent medical woman, began when three months gone in her first pregnancy to have

* See 'Manuel des Accouch.,' tome i, p. 188.

† See 'Trans. Obst. Society of London,' vol. xiii, p. 216.

‡ 'Proceedings of the Royal Society,' No. 195, 1879.

frequently recurring uterine pains. When they first occurred they were not severe and lasted only a few seconds. As pregnancy advanced they became more frequent, more painful, and longer, the womb being felt by the hand to become hard. She has no exact idea of the length of the pains ; they were aggravated by walking and by lying down, and became worse as night came on. For many weeks before her confinement, therefore, she did not go to bed. Labour supervened at the end of seven months of pregnancy and was easy. Then she had three miscarriages about the end of the third month. In her fifth pregnancy the contractions became painful after two months, and continued, as in the first, till the child was born at full time.

G. S—, a young woman, wife of a medical man, began gradually, in the sixth month of her first pregnancy, to have what she called "risings." They increased in intensity and soon almost completely prevented sleep, producing great weakness and emaciation. They recurred several times every hour ; and, during them, the womb became very hard and prominent (rising). They lasted till the child was born. This patient had four children, and suffered in all her pregnancies as in her first, but not so severely. In one pregnancy she had large albuminuria, and labour was induced at the eighth month, because of the alarming condition of weakness of the patient.

The contractions of abortion and miscarriage closely resemble, in all respects, so far as is known, those of natural labour. These last alone I shall consider in the following remarks ; and I shall say nothing of the analogous expulsion of an embedded or intra-uterine fibroid.

Contractions are continued during labour and the puerperal state ; but they take place under quite new conditions, which make their operation entirely different from what it is at other times, that is, in the unimpregnated state and during pregnancy. These different conditions are designated inhibition, dilatation or expansion, retrac-

tion, and polarity. The last two of these subjects, I propose, with the permission of the Society, to enter upon in a subsequent paper.

The contractions of labour are much stronger than those of pregnancy. As to their actual strength nothing is known, or very little. The force of labour, or the propelling resultant of uterine contraction and bearing down, has been the subject of much research; and numerous valuable memoirs on it have been written; and we do not at present enter upon it. The contractions of the puerperal state probably resemble closely those of healthy pregnancy or of the unimpregnated state.

It has been much debated where the contractions of labour commence, and it is still a question. My own impression is that they may begin at any part of the uterus, or of the cervix, before the completion of the first stage of labour, that is, the full dilatation of that part. There are many difficulties met with in attempting to settle the matter. All parts of the uterus are not accessible for observation. In those parts which can be reached by palpation through the anterior abdominal wall, contraction, when beginning, partial and not intense, may not produce such hardness as can be felt. Again, such contraction, if extensive yet partial, may not produce such hardness as can be felt to be partial; for, by pressure exerted on the fluid contents, partial contraction may produce such general tightness as makes it difficult for the palpator to make out difference between parts active and parts passive.* A limited intense contraction will cause pain and will be easily felt by the palpating hand of the examiner. Wherever a regular pain begins it gradually reaches its acme by extending over the whole uterus and cervix in the premonitory and first stages of labour, and over the whole uterus proper or uterine body, during completion of the expulsion of contents and in the early part of the puerperal state.

* For remarks on this point, see the author's 'Contributions to the Mechanism of Natural and Morbid Parturition,' p. 297.

It is usual to ascribe the commencement of labour to increase in strength of the uterine contractions,* which at last become so powerful as to force open the os uteri and the cervix.

The beginning of labour is the beginning of the secret stage of Millot,† the premonitory stage, that is, the opening up of the internal os uteri, or the beginning of the canalisation of the lowest segment of the uterine body and the uppermost adjacent part of the cervix; and we have no evidence of increase of force nor even of painfulness of the contractions at this stage. It is not till the external os uteri begins to be dilated, the commencement of the first stage, that as a rule there come increase of force, duration, and painfulness of contractions. Besides, increase of force brings with it no difference in the other mechanical conditions. The much more numerous pains of pregnancy are surely capable of effecting more than the fewer pains of the premonitory stage, though the latter may number even a thousand. Further, we have already mentioned the occasional occurrence of strong and painful contractions, during months of pregnancy, without any commencement of labour. Something else, therefore, is required besides increase of force, some part must yield. Retraction must be replaced by inhibition. Contractions may continue, retraction must be discontinued.

Another favourite view of the commencement of labour is that, under the influence of the supposed stronger pains, the cervix opens or yields because it is the weakest part.‡

* Tarnier, 'Accouchements,' p. 585. "Les contractions utérines existent donc pendant toute la grossesse; mais elles sont alors faibles et indolores. Elles ne deviennent énergiques et douloureuses qu'au moment du travail de l'accouchement."

† 'Supplément, &c., sur l'Art des Accouchemens,' tome i, p. 406.

‡ Dubois and Pajot, 'Accouchements,' p. 463. "Il en resulte de plus que, si, par exemple, certaines régions de la matrice se trouvaient dans une sorte d'antagonisme entre elles, par rapport au résultat de la contractilité, il en pourrait que l'une des deux parties, la plus faible, la moins étendue, la moins pourvue des masses musculaires fut obligée de céder sous les efforts de l'autre,

But there is here a great deficiency in the argument, for, if it is good, it is of course true, and previously shown, that the lowest part of the body of the uterus, the yielding part, is the weakest part; and no such demonstration is attempted. It yields because it is the weakest part, and it is the weakest part because it yields! Examination of uteri, easily made, yields no confirmation of weakness from deficiency of muscular tissue. Physiology offers nothing analogous to this supposed antagonism of parts employed in the performance of a function, this mutual struggle, resulting in victorious tearing open, or compelled yielding to overpowering force. The lower segment of the uterus and the cervix yield spontaneously; their muscular fibres are inhibited, not overpowered by force.

It is, as already said, generally assumed that the internal os uteri, the first yielding part of the pregnant womb, is the weakest part. But there are reasons for regarding it as the strongest, or at least, as very strong. In the unimpregnated organ the internal os sometimes leaves its impression, as a furrow, in the tangle tent while other parts have yielded to the expansion. The ring of Bandl is often felt as a part harder and thicker than the rest of the uterine wall; and after death it may be sometimes seen.

Again, the uterus in advanced pregnancy is justly represented as an oval, whose upper extremity is the larger or broader; and, in a uniform oval reservoir, such as it is, the weakest part is not the smaller and but the broader. The smaller end is the stronger. No doubt there is a hole in the smaller end, but practically this can make no difference at the beginning of opening, when nothing projects into or through it. There are two holes near the broader end. Opening is favoured by the inhibition which is not extended to the sphincteric fibres of the openings of the Fallopian tubes.

There is still another theory of the establishment of the

longtemps avant que la plus puissante, la plus considérable ait usé la somme de la contractilité dont elle dispose."

pains of labour.* In this, it is made a result of the stretching of the uterine fibres and of pressure upon the sphincteric fibres of the lower segment of the organ, whether the pressure results from growth of the ovum or from the stretching of the uterine fibres. But truly there is no period of pregnancy when the fibres are less stretched than at the end of pregnancy. There is no evidence, indeed, that they are, at any period of pregnancy, in a state of tension. The uterus grows to accommodate its contents, and it is, at the full time, as William Hunter pointed out, not a distended but a somewhat loose sac; it is not replete to tautness, far less to tightness or tension of its walls.

The uterus grows to its full size. It has a size, as an apple has, or a tree, or an insect, or a woman. At all times, and whether pregnant or not, it has regular contractions. These contractions have, no doubt, their utility at all times, but they do nothing in labour till the beginning of the premonitory stage, the opening up of the lower segment of the body of the uterus. This beginning is constituted by inhibition of the circular fibres of the lower segment, and of the cervix. There is no antagonism of these fibres. By their inhibition the lower segment of the uterus is now the weakest part. The contractions press the ovum through the now gradually canalized lower segment of the uterus into and through the internal os and then through the cervix. When the pressure

* Tarnier et Chantreuil, 'Accouchements,' tome i, p. 584. "Ces auteurs (Power et Dubois) admettent une analogie complète entre l'expulsion du produit de conception et l'excrétion de l'urine et des matières fécales. Ils rappellent d'abord que la structure de l'uterus peut être comparée à celle de la vessie et du rectum; ces organes se composent en effet tous trois: 1o, d'un reservoir dilatable; 2o, d'un sphincter irritable formé de fibres circulaires. L'urine, le bol fécal ou l'enfant viennent presser sur le sphincter du réservoir qui les contient; les contractions se manifestent alors par voie réflexe et le réservoir se vide. Mais l'irritation directe du sphincter n'est pas seule à mettre en jeu ces contractions; la distension du réservoir lui-même et le tiraillement des fibres musculaires qui en résulte, concurrent aussi à leur production."

reaches the external os the contractions become stronger, longer, and painful, and the woman complains.

Experiments on tangle tents* have shown that the yielding is not effected by force alone, for the force of expansion, above a slight amount, of these tents is almost unappreciable. Their presence induces inhibition or disposition to yield.

No doubt this expansion by tents closely resembles the expansion of the uterus by the growing ovum, in being effected by a force which, so far as it is mechanical, is almost inappreciable. The expansion of the unimpregnated uterus, in some cases of hæmorrhage, is probably to be explained in the same way; inhibition is established, and it may be that the condition of negative abdominal pressure supplies the necessary small amount of dilating force. Expansion or growth is passive, not active, and does not necessarily involve inhibition.

Many authors have suggested the analogy of urination and defæcation with labour, and with this view I entirely concur; adding, however, that the analogy helps to demonstrate in all these the order of conditions which I have described. There is no urination without inhibition of the circular fibres of the neck of the bladder. So there is no labour without similar inhibition. No further vesical inhibition is required, for the discharge is fluid. In the uterus there is required inhibition and opening of the lower hemispherical part of the body of the uterus, and of the cervix, for a large solid body has to be passed. In the case of the bladder, inhibition and positive abdominal pressure are sufficient for urination; in the case of the uterus, inhibition and uterine contraction are sufficient for canalization, but powerful uterine contraction and powerful abdominal pressure continue for the completion of the expulsion of the fœtus. The pains at this time are the longest, the strongest, and the most frequent.

In labour the uterine contractions probably remain, from beginning to end of the process, the same in extent

* 'Clinical Lectures on Diseases of Women,' 3rd edit., appendix.

and operation, except so far as they are modified by inhibition.

Inhibition begins at the lower uterine hemisphere and advances downwards to the cervix and along the cervix. The descending part of the ovum has reached the os externum before the influence of the inhibition is shown there.

Inhibition first influences the affected parts by shortening the duration of contraction, the shortening being at the end of the contraction, the parts not inhibited acting longer than the inhibited parts, as Wigand long ago pointed out.* It is probably at this time—that is, at the ends of contractions, that dilatation is effected by the prolonged contraction of the parts not inhibited. When dilatation is complete then the influence of inhibition is complete. That inhibition is not complete till full dilatation is effected, is shown by the recontraction of the cervix after discharge of gathered waters below the head. This is especially observed in cases of pelvic contraction, and it further shows that dilatation may here anticipate inhibition, the dilatation by mechanical pressure being greater than that permitted, at this stage, by inhibition.

Inhibition persists in the cervix for some time after the expulsion of the uterine contents; it is a loose shapeless canal only slowly contracting itself. In the cervix both circular and longitudinal fibres are inhibited.

In the lower hemispherical segment of the body of the uterus, at and near the ring of Bandl, inhibition certainly affects the circular fibres, and them only, for this part is thick and dense like the rest of the uterus. In further

* These statements are based on observations confirming those of the accurate Wigand, vol. ii, S. 222 and 223: "Jede normale Wehe oder Contraction in der Gebärmutter lässet nicht plötzlich, sondern allmählig nach, und hält im Boden der Uterus einige Sekunden länger an, als im Munde desselben." . . . . "Die wirkliche, den Sinnen warnehmbare Erweiterung, oder das Nachgehen des Muttermundes erfolgt nicht in demjenigen Augenblicke, wo das Gebärmutterboden gerade das Maximum seiner Contraction hat, sondern erst einige Sekunden später, und nachdem dessen Thätigkeit oder Spannung schon wieder im Abnehmen begriffen est."

contrast with the inhibition of the cervix, the inhibition of these circular fibres ceases as soon as the uterine contents are expelled. While the cervix is then hanging loose and relaxed, the internal os uteri is closed, thick, and hard.

Morbid absence, or failure, of natural inhibition is frequently observed in that rigidity of the external os which depends on spasm, a condition sometimes also observed in the internal os. On the subject of tetanic spasm of the cervix in labour we may refer to a paper by Roper, read at the London Meeting of the International Medical Congress. Morbid presence of inhibition is frequently observed, especially in the placental site, and especially after the birth of the child, as in post-partum hæmorrhage, inversion and hour-glass expansion.

The healthy uterine contractions of labour vary greatly in duration, from a few seconds to half a minute or even a minute. They vary also greatly in number; those of the first stage lasting from twelve to eighteen hours, may rise from a small number to one or even two hundred; those of the second stage, occupying from one to three hours, may vary from one or two to twenty or thirty; those of the third stage may be one, frequently five, rarely more.

Our power of inducing or strengthening uterine contractions is very limited. We can certainly do this by inducing abortion, miscarriage, or premature labour. Apart from this, we may by electricity, and by friction and kneading, exert some influence which may be valuable; but our chief reliance is on peripheral irritations, acting diastaltically, as suckling the child acts, and our chief agents in practice are heat and cold.

In like manner we have little power of stopping uterine contractions, or of diminishing their strength. With this view we can administer sedatives, as opium and chloroform, and we can abstain from all the means which excite or strengthen contraction; but reliance on these expedients should only be slight.

Dr. GALABIN thought that the author's observations in reference to the cause of dilatation of the internal os in the premonitory stage of labour were of much interest. He agreed with him as to the importance of inhibition of the circular muscular fibres in producing this effect. But he could not fully accept his description, if he rightly understood him as holding that the contractions of the premonitory stage of labour are identical with those of pregnancy, that the only new element introduced is inhibition of the contractions of the internal os, and that this allows the uterine contraction to force the ovum into the cervical canal and to dilate it. He thought that the mathematical consideration of the influence of the size of the os upon its resistance to any dilating force was of some significance. The resistance of any circular ring to any dilating force acting from within, the tension of the edge remaining the same, varied inversely as the radius of the ring. It therefore became relatively small when the ring was already partially dilated, but was very great when the ring was minute. Mere initial smallness might be an insuperable obstacle to dilatation in the case of the external os, though he did not know that this ever happened with the internal os. He had met with a case in which labour had been protracted for a week, and the os was thought to be obliterated, the depression indicating the ring of Bandl was felt nearly as high as the umbilicus. A very minute os was discovered. First a stylet was introduced, then a catheter, then the little finger, then within a few minutes two and three fingers. The case was then left to nature, and labour was completed in a few hours, but the child was stillborn though it had been alive when dilatation was commenced. In this case there was no rigidity, and dilatation was resisted merely by extreme smallness. He thought, therefore, that at the commencement of the preparatory stage of labour, when the resistance of the os was at its maximum, and the os too small to allow the body of membranes to enter it, dilatation could not be effected through the ovum being forced down. Besides inhibition there must be something to dilate, and he thought that the force required was to be found in the action of longitudinal fibres directly pulling the os open. Although, therefore, it might be impossible by the touch to detect a difference in the characters of the contractions, yet he thought that there was ground for inferring that a change did occur. The contractions of pregnancy probably involved also the circular fibres of the internal os, and produced merely a general intra-uterine pressure. But expulsive contraction, affecting mainly the longitudinal fibres, and inhibition of the internal os, were physiologically associated. This was then a case of what was called, by a rather fanciful analogy, the polarity of the uterus. He was inclined to press rather further than Dr. Duncan did the comparison of this with the case of the

rectum and the bladder. In all, the action of the detrusor muscles was, by a nervous co-ordination, normally, if not inseparably, associated with the inhibition or physiological relaxation of the sphincter. Thus the sphincter ani could be more effectually relaxed by a bearing-down effort than by any direct volition.

Dr. Graily Hewitt had in the course of practice observed facts which seemed to show that in certain cases the os, having been rigid and unyielding for some time, had apparently suddenly ceased to offer resistance. The question to be determined was the nature of the influence brought to bear in causing that change. He was not satisfied with the arguments used by Dr. Matthews Duncan as to the resistance offered by the os uteri. On the contrary, it might be urged that the lower segment of the uterus, below the ring of Bandl, was really thinner than above the point; also that the lower uterine segment, including the cervix, contained proportionately less muscular fibres than the body of the uterus; also that prior to the actual commencement of labour in the majority of cases the internal os had disappeared, the cervical cavity had merged into that of the uterus, and there remained a mere ring—the os uteri. All these circumstances contributed to lessen resistance at the os uteri and thus to further expansion. Further, in endeavouring to explain the expansion of the os, the facts connected with the action of the bag of membranes in expanding the os were most important. It is well known that a very great disadvantage in regard to the proper progress of labour arises where the membranes are prematurely ruptured, and this alone shows that the os is largely dependent for its expansion upon the force acting from above. He was, however, free to admit that in some cases this did not appear to be the whole explanation. Might it not be that the sudden giving way of the os is due to a paralysis of the muscular fibres, the result of the compression which occurs in process of expansion?

Dr. Horrocks said physiologists have formulated a law that whenever a muscle contracts its opponent relaxes. This law is applicable to all muscle, voluntary or involuntary. When the flexors in the forearm contract the extensors relax. When the circular fibres of the iris contract the radiating fibres relax. The sphincter of the orifice of a cavity is the opponent of the fibres in the walls of the cavity, hence by this law the cervix uteri relaxes when the fundus contracts. This relaxation is a physiological process known as inhibition, and doubtless has some nerve centre in the spinal cord or sympathetic plexuses presiding over it. If the longitudinal fibres in the cervix assist in opening the cervical canal, they are no doubt acting when their opponents, the circular fibres, are relaxing. A practical consideration is whether we have any means of affecting this inhibition

and contraction either by drugs or electricity. I have myself entirely failed to induce labour by means of electricity, faradic or galvanic, although I have used currents strong enough to cause painful contractions of the recti abdominis. I have placed the poles in different places, sometimes over the hypothetical centres in the spinal cord, at others over the uterus, and sometimes one pole on the cervix uteri in the vagina. This has been tried for not less than three days without bringing on labour, and, so far as one could ascertain, without causing uterine contractions. Chloroform, chloral, opium, &c., may to some extent inhibit uterine muscular action, but so far as I know electricity will not. The rhythm of uterine contraction is an interesting study. The rapidity or rhythm of the contractions in paralysis agitans is the same as that in ankle- and knee-clonus, six to eight per second. The contractions of involuntary fibre are much fewer in a given time and are much slower. In a paper in the 'Guy's Hospital Reports' ("Reflex Action in Diagnosis"), I have pointed out that the muscular fibres of the iris (involuntary) are constantly in action in a rhythmic manner, and it would appear that the uterine muscular fibres are also constantly contracting and relaxing.

Dr. ROPER remarked that there were two distinct features in the paper. One of pathological, the other of a physiological character. The first point was illustrated by cases in which during pregnancy the contractions were morbid and therefore painful. These painful contractions may depend on causes of a neurotic kind, whether existing in the uterus itself or in the central or peripheral parts of the nervous system at points remote from the uterus, or from any form of fibrosis of the uterine wall, or from calcareous deposit in the serotina, as often seen on the uterine surface of the placenta. In a physiological point of view, the actions of the uterus as regards contraction, retraction, and inhibition, were analogous to those of all other hollow organs. We may take the stomach as a typical example. When this organ is full, its muscular structure is in a state of varied active contraction, and the pylorus is strongly contracted to retain the contents of the stomach. When, however, the period of digestion is at an end, inhibition of the pylorus takes place, and the contents of the stomach are easily propelled through it. In like manner, throughout pregnancy the uterine muscular fibres preserve a constantly regular contraction, the lower end of the uterus by its contraction acts as a sphincter. When the full term of pregnancy is reached and contractile action of an expulsive nature sets in in the body of the uterus, the sphincteric action of its cervical end becomes inhibited and no longer resists the escape of the uterine contents.

Dr. HERMAN had had under his care in the London Hospital a case somewhat analogous to the examples of painful uterine

contractions during pregnancy which Dr. Duncan had related. It was that of a patient with fibroids of the uterus, who suffered from severe paroxysmal uterine pains throughout the intermenstrual period, these pains being only absent during menstruation. She was treated with ergot, which aggravated the pains. The cervix uteri was then dilated, after which the pains ceased, and were absent for two or three months. They then returned, and the cervical canal was again dilated and the pains again removed. After this he lost sight of the patient.

Dr. CHAMPNEYS thought that Dr. Galabin's objection to polarity could only exist as regards the term, for Dr. Galabin had just said that the same antagonism, shown in contraction and relaxation of opposite poles, was seen in all hollow viscera. If this is the case, the fact of the uterus obeying a general law was in favour of the existence of the same force in the uterus. In the case of the uterus, this antagonism had been called polarity by Reil, and the name was a concise and convenient one. Although Dr. Duncan expressly stated that he was not now discussing polarity, it had formed a considerable part of the discussion of the paper, and Dr. Champneys had made these few remarks on that ground. As regards the remarks of Dr. Galabin, that opening of the cervix was not due to spontaneous relaxation, and the remarks of Dr. Hewitt that the os internum yields because it is the weakest part, he would say that he thought spontaneous yielding could not be denied in the face of the following facts:—In labour with contracted pelvis it sometimes happens that the head is arrested above the brim, the membranes present in the shape of the finger of a glove; but in spite of these conditions, the cervix is found by the hand (introduced perhaps for the sake of turning) hanging flabby and relaxed, almost as if labour had already ended. Again, it sometimes happens that the os tincæ, though very thin, refuses to dilate, and remains rigid and unyielding, however strong the labour-pains may be. Under these circumstances, great retraction may take place, and Bandl's ring may be felt high up, the lower uterine segment being greatly thinned. The polarity is disordered, the expansion, which should possess the lower pole of the uterus during labour, is replaced by contraction, and the result is a dead lock. Under these circumstances, in the presence of accidental hæmorrhage, he had turned by the bipolar method, brought down a foot, and immediately (apparently in consequence of the reduction in the contents of the uterus) the dead lock was ended and the cervix relaxed. He thought it could not be maintained that the os externum was stronger than the os internum, and cases like the above were an absolute proof that something more than force was required to expand the cervix during labour. He would ask Dr. Duncan whether he had been able to distinguish the contractions of the vagina,

which he had observed, from those of the muscles near it; especially the levatores ani. He had observed cases of painful labour-pains during pregnancy and thought they were due to irregular, disorderly, non-rhythmical contractions, such as in other hollow muscular viscera were known to produce colic. The painfulness of labour-pains does not usually begin at the beginning of the contractions; he often was able to predict a labour-pain before the patient felt it.

Dr. Braxton Hicks, without discussing the whole paper, wished to point out a fact, not alluded to, namely, that during the last six weeks of normal pregnancy the os and cervix were in a considerable number of cases patent enough for one or two fingers to be readily passed in. Often, when proceeding to induce labour at seven and a half to eight months, he was able at once to employ the largest size of Barnes' bags. He remarked that the subject of the paper could not be fully discussed without this fact being taken into account.

Dr. W. S. A. Griffith, referring to the effects of electricity on the uterus, remarked on the great difference of opinion held by different observers, most of whom however appeared to agree with Dr. Horrocks that it was of little value in causing or increasing uterine contractions. Dr. Kilner, in a paper read two years ago, had pointed out the value of the interrupted current in diminishing the pain of labour-pains.

Dr. Robert Bloxall.—As happens in the case of the perineum, so also in that of the cervix; two varieties of rigidity may be distinguished, muscular rigidity, met with in the young and nervous, and fibrous rigidity, encountered most frequently in aged primiparæ. One or other of these causes of rigidity are frequently operative, and especially the former. Moreover, they are not infrequently combined. On the other hand, in a great many cases the distinction may be easily made. And the cause being distinguished, the treatment necessarily varies in the two cases; in the one, chloroform and chloral will relieve the rigid muscles (and probably also electricity comes into the same category), but in the other, the fibrous condition of the tissues will be only overcome by resort to some such measures as the hot douche. In the omission to relegate the rigidity to its cause may possibly be found an explanation of the varying results obtained by the use of electricity.

Dr. Matthews Duncan was much fortified in his views by the general concurrence of the gentlemen who had spoken. Some supposed differences of opinion were the result merely of different meanings of terms.

CASE OF LABOUR IN A PRIMIPARA SUFFERING FROM MITRAL STENOSIS.

By George Coates, M.B.

Mrs. E—, æt. 22, a tall, delicate, slightly built woman. Face pale, lips with rather a bluish tinge. In 1879 she had a sharp attack of rheumatic fever, and since then has suffered more or less from anæmia, pallor of face, and breathlessness. Neither she nor her friends had any suspicions of a heart affection; they had always been told there was none.

She had not suffered from any other attack of rheumatism previous to her confinement.

I saw her first on October 23rd, 1885, as some of the amniotic fluid had come away.

Well-marked pains set in about 11 p.m. on October 23rd, and occurred at intervals of from five to twenty minutes till the birth of the child.

On October 24th, in the afternoon, she felt very faint several times.

On examining the chest the heart was found to be normal in size, but there was a well-marked præsystolic murmur at the apex indicating mitral constriction.

Pulse about 86 per minute, regular. Temperature normal.

The pains, though frequent, produced little progress, and it was not till 8.30 p.m. on the 24th that the os was fully dilated.

About 9.30 p.m. she showed signs that her strength was becoming exhausted, the pulse being about 108 to 112, and the temperature over 99° F. Forceps was put on high up, and the child born about 10.30 p.m., the placenta coming away about 11 p.m.

After the placenta had come away she felt very faint for about three quarters of an hour. The pulse-rate* was at first about 180 per minute, temperature normal; by 1.15 a.m. on the 25th the pulse had fallen to 108. The same morning at 10 a.m. to 76. There was a little more than the ordinary amount of hæmorrhage, but not enough to cause any alarm and not enough in any way to blanch her lips.

The præsystolic murmur was very well marked for a few days after the confinement, but entirely disappeared on and after the tenth day.

Her temperature remained normal till November 13th, when she had a shiver at 9 p.m.; at 10 p.m. her temperature was 103·2°, and at 12 o'clock (midnight) 105·2°, pulse 116; she had sharp pain in her left breast.

November 14th.—Temperature, morning 104·2°, pulse 108; 2 p.m. 104·5°, pulse 112; 9.30 p.m. 103·2°, pulse 108. The breast was less painful, there was general stiffness in the limbs, and sharp pain for a short time in the left elbow. The urine was very acid. There was no abdominal tenderness, and the uterus was not tender and not larger than it should be. There was profuse perspiration of the peculiar odour met with in acute rheumatism. She was treated after 2 p.m. on the assumption she was suffering from acute rheumatism, with quinine and thirty-grain doses of citrate of potash every three hours.

15th.—Temperature, 9.15 a.m., 100·2°, pulse 84. 9.45 p.m., 99·4°, pulse 72.

16th and later.—Temperature varying from 98·4° to 98·8°. The acid smell in the perspiration had gone.

On the 14th there was for a short time a well-marked systolic mitral murmur as well as the præsystolic.

On the 16th there was no murmur to be heard, and it has not been heard again up till to-day, November 18th.

* The pulse fell gradually from 11 p.m. to 1 a.m., being at different times 180, 160, 130, &c.

Dr. HERMAN thought that Dr. Coates's case was a very interesting and instructive one. In the management and prognosis of pregnancy with heart disease, he thought most would be largely guided, as he himself should be, by the late Dr. Angus Macdonald's work on heart disease during pregnancy. Although he greatly admired that work, he yet thought that Dr. Macdonald took too unfavourable a view of the prognosis in the case of a patient with heart disease who should become pregnant. Dr. Macdonald's conclusions were based upon published cases, and cases to which he had been called in consultation; and cases so selected would obviously be likely to contain an undue number of bad cases, for those who went through labour without unusual symptoms would be less likely to be published, would not require consultations, and possibly the medical attendant might even not know that there was heart disease. In Dr. Coates's case the patient was unaware of there being anything the matter with the heart, and had there not been symptoms leading the medical attendant to examine the chest it might not have been known. Dr. Coates's case was an item of evidence showing that with valvular disease of the heart it was quite possible that pregnancy and labour might be gone through without the occurrence of distress or danger. Some of Dr. Macdonald's cases showed the same thing. He (Dr. Herman) had met with cases which also gave proof of this, and he believed they were more numerous than the literature of the subject would lead the student to think. He did not think that the mere presence of valvular disease, evidenced by a murmur, showed that the patient incurred much greater danger by becoming pregnant than anyone else. What was important was the state of the cardiac muscle, whether the valvular disease was enough to obstruct the circulation, and if so, whether the cardiac muscle was equal to the increased work thus thrown upon it. If it were, if the patient did not suffer from dyspnœa, œdema, &c., he did not think that a very unfavourable prognosis was called for, even though the patient had a murmur. Even where, during pregnancy, heart disease caused embarrassment to the circulation, dyspnœa, œdema, &c., he had seen quick and complete relief follow the induction of premature labour. Dr. Angus Macdonald rejected this measure on account of the bad results in cases in which premature labour spontaneously came on. But premature labour coming on, as it often did, immediately before the termination of a fatal illness, ought to be distinguished from premature labour induced early for the purpose of relief. Puerperal endocarditis was one of the dangers said to follow labour with heart disease. But he (Dr. Herman) thought there was not yet evidence enough to show that a lying-in woman with valvular disease was more liable to endocarditis than any other person with valvular disease, though of course a subject

with damaged valves was more liable to acute changes in them than one in whom they were healthy. In Dr. Coates's case the acute symptoms did not come on until the usual lying-in period had passed.

Dr. CHAMPNEYS said that Dr. Coates's case differed in many respects from those which had been recorded and those which he had himself seen. There was, for instance, no aggravation of symptoms towards the end of pregnancy, no distress during labour, and no alarming symptoms soon after labour when the blood-pressure fell. The work of the late Dr. Angus Macdonald had been founded on comparatively few observations, and all well-recorded cases were valuable. Mitral stenosis was supposed to be the worst form of cardiac mischief under the circumstances.

Dr. E. S. TAIT said, when I was house physician at the General Lying-in Hospital, a patient was admitted under the care of Dr. John Williams, with a loud systolic mitral murmur. Her breathing was greatly embarrassed and she had an anxious expression. The labour passed off quite naturally and without difficulty. Immediately after the birth of the child she became faint, owing presumably to the altered pressure, but this quickly passed off. Her convalescence was uninterruptedly good, and the involution of the uterus rapid, the only event of interest being a quick rise of temperature on the fifth day, from 99° to 105°, caused by being wakened suddenly from sleep by another patient calling out; this fell again within eight hours to 98°.

MAY 5TH, 1886.

J. B. POTTER, M.D., President, in the Chair.

Present—36 Fellows and 4 visitors.

Books were presented by Sir H. W. Acland, Dr. Goodell, and the Royal Medical and Chirurgical Society.

Herbert Lankester, M.B.Lond., was admitted a Fellow of the Society.

William Joseph Cross, M.B. (Victoria), and Reginald Hartley, L.R.C.P.Ed. (Thirsk), were declared admitted.

The following gentlemen were elected Fellows of the Society :—John W. Byers, M.D. (Belfast), Charles Owen Fowler, M.D., and Fourniss Simmons, M.A., M.B.Edin.

The following were proposed for election :—Tom Bates, L.R.C.P. (Worcester) ; Joshua John Cox, M.D.Edin. (Manchester) ; Archibald Donald, M.B.Edin. (Manchester) ; Arthur Andrew Jamieson, M.D. (St. Helen's) ; William Owen Jones, M.R.C.S. (Manchester) ; Alfred Edmund Kennedy, L.R.C.P.Ed. (Plaistow) ; William Lauder, M.B.Edin. (Manchester) ; Arthur Matthey (Croydon) ; Herbert Smith Renshaw, M.D. (Manchester) ; Arthur Edwin Sutcliffe, M.R.C.S. (Manchester) ; W. Reginald Tuckett, M.R.C.S. (Bath) ; and Arthur Thomas Winterbottom, L.R.C.P. (Swinton).

GRADUATED METALLIC UTERINE DILATORS.

Dr. Samuel Sloan, of Glasgow, showed a case of graduated metallic uterine dilators. Each instrument is composed of two dilators, the one being a handle to the other. They are numbered as in the male bougies. The first half inch of each dilator serves as an indicator, three parts of which is the thickness of the next smaller size, the remaining portion (one eighth of an inch) being a gradual slope to the dilating part. The object of the indicator is to straighten the uterus and to indicate its exact axis. There is a groove on the back of the dilator one and a half inches from the tip. When this groove is near the external os dilatation at the internal os is beginning. The tip is not conical but spherical, so as not to catch in a fold of mucous membrane.

Mr. Doran thought that the shallow depression on the dilator for indicating when the instrument had entered sufficiently far to commence the dilating process was a good contrivance. He regretted, however, to see notches on the handle. The notches on old-fashioned sounds lodged blood and vaginal mucus, which were very apt to decompose if not carefully washed away. A dirty sound might introduce into the uterine cavity all kinds of septic matter. In this way the sound was doubtless not unfrequently the cause of pelvic inflammation.

In reply, Dr. Sloan pointed out that if an antiseptic solution were used there could be no danger of carrying infection from the vagina into the uterine cavity, which was also made less likely by the markings in the instruments being few, broad, and shallow. The instruments had been found in the hands of himself and those of his friends who had tried them, safe, easy, and comparatively painless.

Dr. Sloan also showed a set of eight dilators of the female urethra, on the same principle, but straight, No. 1 being eight millimetres in diameter, and the increase in each number being one millimetre. He found them easy of application and almost painless.

ON ELASTICITY, RETRACTION, AND POLARITY OF THE UTERUS.

By J. Matthews Duncan, M.D.

Retractility, say Dubois and Pajot,* is that property of the uterine tissue in virtue of which the womb, emptied of a part or of the whole of its contents, acquires a greater thickness of wall, at the same time that its volume and its capacity are diminished.

Uterine retraction is justly regarded as a function of the muscular part of the wall. This is the only part which is contractile, and so possesses a power adequate to the performance required. But elasticity† may have some share in it, and the property is possessed by each of the layers of tissue composing the uterine wall.

Very little is known of the elasticity of the mucous membrane. In experiments on the tensile strength of the bag of membranes its presence may be ascertained, and the membrane gives way suddenly, and with a noise sometimes as of a slight fillip.‡ In natural conditions it is almost certain that this quality of living mucous membrane is little called into play, the membrane expanding or growing readily to suit the increased capacity required; shrinking also in opposite circumstances, with scarcely appreciable force, not presenting folds or wrinkles after delivery, yet thus demonstrating its elasticity. Even in morbid conditions of excessive and rapid distension its amount, as a force, is practically insignificant, for the

* 'Accouchements,' p. 468.

† 'Archiv für Gynæk.,' Band iii, S. 89, 1872.

‡ Author's 'Contributions to the Mechanism of Natural and Morbid Parturition,' 1875, p. 65.

membrane is easily lacerated, and it lines stronger and more elastic layers. It is upon the dead decidua of the bag of membranes that experiments have been made which demonstrate the existence and the slightness of this force. Its action will contribute somewhat to that constant intra-uterine pressure which is believed to exist during pregnancy, and has been demonstrated by Schatz* to be present during labour.

The elasticity of the muscular coat of the uterus is easily shown in experiments on its tensile strength, and it may be a very powerful force. But in healthy pregnancy or labour it is always a very small force, for, as already said, the uterus is, in the absence of contraction, not even taut on its contents; and the organ, when emptied, contracts very little in virtue of this quality. I know no estimate of the measure of contraction on evacuation due to elasticity; certainly that of the whole uterine wall is very slight. Besides, if during life the elasticity of muscular tissue is brought into play, it persists only for a very short time, because the muscular tissue yields or grows, and thus the elastic force disappears.

In cases of twins and of hydramnios we find evidence of the ready yielding, or of the growth, of the muscular wall of the uterus; for in these states the organ is generally not in a state of considerable tension. When tension is great there is pain, and if the tension persists there is generally supervention of labour. Examples of great tension are sometimes, though rarely, found in the rapid growth of uterine hydatids; and in some such cases, the uterine walls are thinned by expansion, and the chorionic villi may be forced deep into the uterine sinuses of the wall. Such experiments as those of Glenard, on the expansion after death of the uterus of a recently delivered woman, do not show elasticity of the uterus, for it does not shrink into former dimensions after the expanding force is withdrawn.

The elasticity of the peritoneal covering of the uterus

* 'Archiv für Gynæk.,' Band iii, S. 115, 1872.

is probably the chief element in the elasticity of the uterus generally. It is certainly the strongest of the layers constituting the uterine wall and possessed of most of the quality of elasticity. Like the muscular coat, it no doubt rapidly grows under tension, and, like it, also rapidly atrophies when the uterus is emptied. It has no contractility, and yet it shrinks from the resistance of the uterus at term to the comparatively small area of the outer wall of the empty organ, and this shrinking is generally without a wrinkle.* The presence of wrinkles shows that the limit of elastic shrinking is over-passed, and they are not rare; and in some cases it appears that the deficiency of elastic shrinking may lead to cracks or peritoneal ruptures.

The combined power of the elasticity of the various layers of the uterine wall is not sufficient, as already said, to keep the uterus taut; this organ is soft and even flaccid in the absence of contraction. There is no reason to suppose that in the living uterus the power of elasticity is not diminished as gradual evacuation of the pregnant organ proceeds. Jacquemier† attributes to this force a share in the commencement of the shrinking of the uterus when, in labour, it begins to be emptied.

Retraction is more than Dubois and Pajot say; it is a force which owns as its source the action of muscular fibre, but the action is different and distinct from contraction. Before the commencement of the premonitory stage of labour, retraction, if it occurs, is a mere tonic tightening of the uterine wall, and it is not observed in natural or

* Author's 'Contributions to the Mechanism of Natural and Morbid Parturition,' p. 122.

† 'Accouchements,' vol. i, p. 187. "Il est evident que, lorsque l'utérus commence a se désemplir par l'écoulement des eaux, les fibres distendues éprouvent, en vertu de leur élasticité, un raccourcissement proportionné à leur distension. Si la contractilité organique concourt à ce resserrement, parce que, ordinairement, les deux actions sont simultanées, il n'est pas moins vrai que le résultat serait obtenu par l'élasticité seule; mais ce resserrement est fort borné, et ce n'est point à l'élasticité qu'est dû le retour de l'utérus sur lui-meme, mais bien à la contractilité organique."

healthy uteri. When the premonitory or secret stage commences, inhibition of the circular fibres of the lower segment of the uterus having supervened, then retraction commences. The uterus proper, or uterine body, becomes gradually and unceasingly smaller till labour is finished; and the retraction continues in the puerperal state till the uterus is restored to its proper size as an unimpregnated viscus. In contrast to its growth and expansion for nine calendar months is its involution and retraction for six weeks. During labour retraction is very active and its results very great and important; after parturition retraction is less active and its beneficial results are more slowly produced.

Retraction, farther than mere tonic tightening of the uterus, is not possible till the internal os uteri is so far opened up as to permit descent of the lower end of the ovum. Just as the ovum enters the expanding cervix so is the uterine body retracted. The retraction is permanent, not temporary, like contraction. It is incessantly progressive while it lasts.

During labour there is no retraction of the circular fibres of the lower segment of the body of the uterus nor of any fibres of the cervix or of the vagina; these two latter parts are expanded longitudinally and transversely, and remain expanded till labour is finished. After labour the circular fibres of the lower segment of the uterine body contract and retract at once quickly; the cervix and vagina much less rapidly.

At the completion of delivery, the uterus in a state of strong contraction is hard, nearly globular, and about the size of a fœtal head. When the strong contractions of labour have ceased it then shows its condition as a merely retracted organ, not nearly so hard as when in contraction, and forming a mass flattened antero-posteriorly; its body, which had a measurement of about twelve inches in length from internal os to fundus, measuring now about four inches.

Retraction of the uterus proper, or uterine body,

implies necessarily diminution of its contents, that is, expulsion of its contents; and it generally implies progress of the ovum or progress of labour. But the progress of labour may not be in proportion to the retraction.

The combined forces of contraction and retraction, the propelling uterine force, have first to make taut and then tighten the parts which offer the required resistance or reaction equal to their action. These parts are the cervix uteri and vagina, and they are elongated and tightened long before any propulsion by the uterus can take place. Retraction must therefore take place to a considerable extent before advance by uterine propulsion can occur.

Uterine contractions go on regularly and constantly; they are probably increased in number and strength before and during the early part of menstruation; they are certainly more numerous and stronger during labour. But contraction does not imply retraction, nor is there any ground for holding that retraction is a mere retention of part of the ground gained by contraction; it is a separate and distinct function, that is, it may go on without contractions. It is certain that contraction does not necessarily imply retraction. That retraction is not dependent on contraction is difficult to prove. Often during a smoothly progressing labour I have watched the continuous drain of liquor amnii into a previously squeezed-out sponge going on in the intervals, a phenomenon which seems to be dependent on continuous retraction. Contraction is temporary; retraction is permanent and progressive.

Jacquemier,* Dubois, and Pajot† arrived at nearly similar conclusions, saying that "one cannot believe in

* 'Manuel des Accouchements,' 1846, tome i, p. 189. "C'est ainsi que, pendant le travail, la contractilité de l'utérus est en exercise sous deux formes, par des efforts intermittents, douloureux, et souvent réitérés, et par une rétraction continue sans douleur qui ramène l'utérus sur lui-meme à mesure que la résistance disparait. Si la première concourt plus particulièrement à l'expulsion du fœtus et de ses annexes, la seconde s'oppose surtout aux pertes de sang et au renversement de l'organe."

† 'Accouchements,' p. 472.

the complete identity of nature between contractility and retractility, and see in them only two forms of one property; for besides the incontestable advantages for practice in separating the study of them some pathological facts demonstrate visibly a sufficiently great difference between them."

It is common to make a comparison of the action of the heart and of the uterus. The contraction is called the systole, and the relaxed condition the diastole. But the analogy is very imperfect. The contractions of pregnancy are like one another as the cardiac contractions are, but they expel nothing as the cardiac contractions do. The contractions of labour are unlike one another in their effects; each one does a different piece of work from its predecessor and from its followers; and, in this respect, they are unlike cardiac contractions. Further, in labour, there is constant retraction as long as retraction is possible; at each contraction the uterine body is less in area and greater in thickness than it was in last contraction; and no such change occurs in the heart. In labour there is inhibition of a part of the uterus; during cardiac contractions there is no inhibition. While the analogy, as already said, between uterine and cardiac contraction is very imperfect, it would be at least as good to strike it between the retraction of labour and a cardiac contraction. In the diastole of pregnancy the uterus grows and is filled; in the systole of labour it retracts and is emptied; each pregnancy a diastole, each labour a systole, the systole being more a function of retractility than of contractility.

This analogy of labour with cardiac systole is illustrated by the morbid process of expulsion of a fibroid. At each menstruation or uterine systole there are pains, bleeding, and the extrusion of the fibroid into the cervix, or into the vagina. As menstruation ceases the diastole takes place, pain ceases, bleeding ceases, contractions continue, retraction ceases, and the fibroid is withdrawn into the uterine cavity. At succeeding menstrual periods the process of systole and diastole is repeated; and it is not

till advanced retraction of the uterine body takes place that the fibroid remains in the cervix or in the vagina.

A good illustration of contraction and retraction is observed in cases of intracervical abortion, sometimes called cervical pregnancy, a rare occurrence. The small ovum is gradually expelled from the uterus proper, the uterine body; but, the external os uteri remaining undilated, it is retained in the expanded cervix. The uterus has, by its contractions and retraction, expelled the ovum into the cervix; and the uterine body has become empty and retracted. A similar occurrence is common in so-called intra-uterine polypi, such being not intra-uterine properly, but intracervical.

Even at term a similar state sometimes is found, as Litzmann* has pointed out. Complete retraction and also closure of the uterus proper or uterine body is sometimes observed in cases of breech presentation, while the child is only partially born, and even when the head is retained in the pelvic brim. Complete retraction without closure implies imperfect retraction of the circular fibres, the uterus forming a cap over the highest part of the fœtus, and sometimes also a quantity of liquor amnii; a condition that is observed in many cases of incomplete delivery, and of which Bandl has given good diagrammatic illustration.

These are examples of morbid premature retraction, and in them, farther contraction is almost or altogether powerless.† But in pathology we have good examples of deficient retraction, and among these may be cited post-partum hæmorrhage, recent uterine inversion, and hour-glass relaxation. In the two last conditions it is generally the placental site, and it alone, that is in a state of deficient retraction; and the persistent adhesion of the placenta shows that there has not been even a single perfect contraction. The deficiency of contraction may depend on deficiency of retraction; or deficiency of retraction may

* 'Archiv für Gyn.,' 1876, Band x, S. 420.

† See the author, in 'Obstetrical Journal of Great Britain and Ireland,' February, 1878.

depend on deficiency of contraction. In both of these conditions there is no evidence of morbid contraction or morbid retraction except in the placental site or its neighbourhood. There is in that part morbid absence of retraction. Had proper retraction, at proper time, taken place, neither inversion nor hour-glass relaxation could have occurred.

It is in post-partum hæmorrhage that the practitioner feels most acutely the want of retraction, as Breisky* has strongly urged. Contraction comes and goes and retraction is deficient and the flooding goes on. Contraction again comes, or is excited, and retraction is hoped for; at last retraction is maintained and the flooding is stayed. It is retraction, and retraction alone, that is a safeguard against hæmorrhage. No doubt, a contraction, if strong and sufficient, stays the bleeding, but only for a time. It is liable to return until retraction is maintained.

Failure of retraction is observed in those cases of secondary puerperal hæmorrhage, wherein there occurs such uterine dilatation as is observed in post-partum hæmorrhage after full contraction and temporary retraction; and rare cases of similar hæmorrhage occur in the otherwise healthy virgin.

Morbid persistence of retraction, or rather failure of inhibition, is, in many circumstances, and especially in preternatural labours, observed in the first and second stages of labour. At the external os uteri, in the first stage, it forms the tetanus of Roper. At the internal os uteri it is a stricture by the ring of Bandl. Probably this persistent ring of internal os uteri is the cause of a painful and prolonged premonitory stage; and certainly it is often the cause of difficulty in the second stage, especially in morbid labours.

In prolonged labour, after discharge of the liquor amnii, when the uterus is becoming inflamed, there is imperfect intermission of pains, a condition described specially by Braxton Hicks, which is caused by a degree of premature retraction.

* See 'Volkmann's Sammlung,' No. 14 (Gynækologie 5).

It is in connection with retraction that the action of ergot should be studied, and the study throws light on the theory of retraction, and especially on its independence of contraction. The evidence of observations goes to show that ergot, when it acts, does so by producing retraction. This explains its failures, its injuries, and its benefits.

I know nothing tending to show that it produces contractions directly, or that it directly increases the force of contractions, or their frequency. It must be admitted that increased retractile force, added to the force of contraction, will produce a greater force as the combined resultant; but this greater force is probably not produced by increase of the contracting force.

Ergot cannot be expected to produce, directly, abortion or miscarriage; for it cannot produce inhibition; and inhibition of the lower segment of the uterine body is necessary for the commencement of these processes. It is, indeed, generally held that it prevents due and natural inhibition; for it is a common belief that, if administered in the third stage of labour, before the expulsion of the placenta from the uterus, it produces incarceration of this cake; and this incarceration is owing to failure of yielding or of inhibition of the circular fibres of the lower segment of the body of the uterus. That it may, by producing retraction, and thus, injurious effects on the ovum, lead indirectly to abortion or miscarriage I do not doubt; yet even this ulterior result of its free administration cannot be relied upon.

Its injurious effects in labour are not due to increase of force of contractions however produced, but to premature or excessive retraction. Such retraction, when complete or nearly complete, destroys the effectiveness of uterine contractions by reducing their extent. Retraction, in whatever degree, may interfere with necessary expansion by preventing or diminishing inhibition. But its chief injury is constant pressure. It is said, truly, to destroy the intermissions of pains or the completeness of the intermissions: that is, it leads to constant pressure; and

e veryone knows what injury may come from this source to mother and to fœtus.

In flooding, at any time before complete delivery, ergot may be of use by producing retraction and a reduction of the extent of the bleeding area; and many high authorities recommend its use, being willing to accept its injurious effects as being less in value than that of the beneficial effect of reducing the amount of blood lost, by reducing the extent of the bleeding area.

After complete delivery, it has various applications of the greatest benefit and without compensating disadvantage. That action, which, before complete delivery, was injurious or of questionable value, is now simply desired. By retraction we diminish the extent of absorbing surface of the interior of the uterus and expel the noxious substances liable to be absorbed. By retraction we reduce the bulk of a weak flabby uterus and so obviate after-pains or diminish their violence. But it is in flooding that retraction is invaluable—our only safeguard—and, besides the influence of powerful contraction, we have no means of producing it but ergot of rye.

In gynæcological practice, ergot of rye is also a valuable remedy, on account of this retraction. It is of signal service in some cases of menorrhagia and of flooding in cases of uterine fibroid. Besides, induced retraction may produce death of a fibroid, or it may, in combination with contractions, produce expulsion from the uterine cavity of an intra-uterine fibroid, or even expulsion of an embedded fibroid into the genital passage.

John Williams has described retraction in ordinary menstruation. Its action in producing reduction of the uterine dimensions after delivery, preventing subinvolution, must be quite as important as the histological changes which are alone generally thought of when the subject of involution is discussed. Histological changes may be present without reduction of dimensions.

Uterine polarity implies inhibition of retraction, not of contraction, at one pole of the uterus, while retraction is

present at the other; and it is not a term used to denote a class of mere coincidences,* for there is a causal connection between the opposite states of the two parts. Inhibition at one pole produces retraction, not contraction, at the other, and *vice versâ*. On this subject I satisfy myself by referring to the work of Reil and of Champneys,† where much that I have previously stated in this paper will be found distinctly foreshadowed; and, if we consider the state (1807) of obstetrical physiology in Reil's time, we must all the more admire his acuteness and originality.

Study of the pregnant uterus alone would not suggest a different dynamical condition of its parts; but the added study of labour, and other observations to be mentioned, demonstrate the difference. During pregnancy and on to term, the whole uterus, but especially the higher parts, is expanding freely, the lower pole maintaining a closed condition of the internal os uteri. When labour commences, the whole uterus begins to act by retraction, except the circular fibres of the lower polar part, which are relaxed, and the internal os is opened up. As the retraction of all the upper parts, and of the longitudinal fibres of the lower polar part goes on and increases, the inhibition of the circular fibres of the lower pole and dilatation of it goes on till it is completely dilated, and so it remains till expulsion of the uterine contents is effected.

In inducing abortion or premature labour we take advantage of this polarity. By dilating the lower pole we produce action of the upper parts of the uterus, and this retraction induces inhibition of the lower parts and

* Levret describes the coincidence, saying: "En effet, de méme que la vessie urinaire, le corps de la matrice est antagoniste à son col, et celui-ci à celui-là, suivant les circonstances qui en deviennent les causes déterminantes; en sorte que tant que le corps de la matrice sera dans l'inertie, son sphincter propre sera contracté; mais si-tôt que le corps de ce viscere viendra à se contracter, les parois de son orifice seront obligées de lui céder."—'Essai sur l'abus des régles générales, &c., des Accouchemens,' 1766, p. 177.

† 'Obstetrical Journal of Great Britain and Ireland,' vol. vii, 1879-80, p. 609.

the starting of the process of evacuation. Or, by passing a bougie high between the membranes and the uterus, we irritate the upper parts of it so as to induce inhibition of the lower pole and the commencement of labour.

It is a common observation, in labour retarded in the first stage, by unyielding cervix, that the desired acceleration is at once obtained by evacuation of the liquor amnii. The retraction of the higher parts of the uterus consequent on this partial emptying induces inhibition of the lower parts. This practice is, of course, successful only when the delay of dilatation is the result of action of the circular fibres of the lower parts; and even then it cannot be relied upon.

In hour-glass relaxation we expand the contracted parts to reach the incarcerated placenta and cause retraction of the inactive parts; resumed action of the relaxed parts induces dilatation of the lower parts, and secures passage for the placenta.

Dr. M. Handfield-Jones thought the term "retraction" should be limited to the action of the longitudinal fibres in dragging upon and expanding the cervix during the first stage of labour. Retraction had been considered as the condition of the uterus after the expulsion of the placenta, but if retraction and contraction were used in their derivative meaning, the latter term was certainly more applicable to the condition of the womb than the former.

Dr. Galabin thought the author's description of retraction of the uterus of much interest and importance, and agreed with almost the whole of it. But he was surprised to hear one statement in the paper, namely, that ergot tended to produce only retraction and not contraction of the uterus. If this were so then the general opinion that ergot acts, in some cases at any rate, as an oxytocic, and hastens delivery, or completes it when it would not be completed naturally, must be erroneous. Moreover he had met with cases in which rupture of the uterus had occurred after the administration of ergot in obstructed labour, and in which intense rhythmical pains were described as having preceded the rupture. In such cases he thought that rupture could not be accounted for simply by continuous tension and pressure due to retraction having weakened the vitality of the tissue. Perhaps the explanation was that Dr. Duncan refused the title of contraction to that kind of contraction which was

the initial stage of retraction. But he thought that such a use of the words could not be maintained. By contraction he understood shortening and thickening of the muscular fibres; by retraction a similar shortening and thickening, not followed by relaxation and lengthening, but leaving a permanent shrinking after the tension of the contraction had passed off. Retraction was contraction and something more. The contraction itself was identical in the two cases. Thus, if the uterus contracted in a case of post-partum hæmorrhage, the contraction itself was the same whether it was followed by relaxation and renewal of hæmorrhage, or ended in retraction with arrest of hæmorrhage. He believed that ergot had the power of intensifying both effects in variable degrees in different cases, both the initial rhythmical contraction and the subsequently persisting tonic contraction which maintained the shrinking produced by it.

Dr. Horrocks said the diminution in the size of the uterus at the end of labour cannot be due to elastic recoil of muscular fibres, because, although the elasticity of muscle is nearly perfect it is very slight in amount, that is, it will not stretch much, but will return to its former size on removal of the stretching force. By retraction of muscle he understood contraction which is not followed by the usual relaxation or rather return to its former condition. A contracted muscle feels hard, a retracted muscle does not. Probably the state of retraction of the uterus, immediately after parturition, is due to the fact that there is not sufficient force within the cavity to stretch the fibres to their former length. The subject of polarity of the uterus is one of great interest, although it is only part of the great general question of the relaxation of opponent muscles, when one group is in action. In a paper on the movements of the eyelids ('Medico-Chir. Trans.,' 1879) Dr. Gowers has shown that the orbicularis palpebrarum which closes the eyelids is relaxed when the levator palpebræ which opens them is in action, and *vice versâ*. It is also well known that the sphincter ani relaxes during defæcation. Similarly the sphincter vesicæ (of Henle) relaxes in micturition, so that the relaxation of the fibres of the cervix uteri (sphincter uteri) during the contraction of the fibres of the fundus is only one example of the general law applicable to all muscles, voluntary or involuntary. All muscles are in a state of slight contraction called reflex tone, which must not be confounded with the state of "being on the stretch." When the tendon of a muscle is cut the muscle shortens owing to elastic recoil, and this takes place whether the muscle be alive or dead. But the reflex tone of a muscle is dependent upon the integrity of the reflex loop which involves the nervous system. Now, in connection with defæcation, micturition, and parturition, there is a reflex tonic contraction kept up in the muscular fibres concerned, more especially in the respective sphincters. The contraction of

these sphincter fibres can be inhibited, and the centres for inhibition are closely associated for the centres causing contraction of the expulsive fibres concerned. These three acts, defæcation, micturition, and parturition, can take place independently of volition or even of consciousness. At the same time the will has a modified power over them, and whilst micturition can be voluntarily set in action by the contraction of the abdominal muscles driving urine into the urethra and so setting up the reflex process of inhibition of the sphincter and contraction of the detrusor, so probably the bearing-down (voluntary) of the parturient woman assists contraction of the uterus and relaxation of the cervix by driving the liquor amnii and membranes into the cervical canal, and so setting up the reflex process of parturition. Finally, he believed that ergot can cause contraction of muscular fibres, because it has been given successfully many times to bring on premature labour.

Dr. Champneys said that he also had some difficulty in accepting the teaching in Dr. Duncan's paper, that the result of ergot was to produce retraction. The action of ergot was, he thought, somewhat puzzling to anyone who studied the matter. That it did not produce true contractions he believed, but that it produced true retraction he doubted. Retraction is well seen after delivery, and he gathered from the paper that Dr. Duncan meant by it a result of contraction producing permanent rearrangement of the uterine fibres. The action of ergot was often to produce a contraction of limited extent, and then tetanus, the organ contracting and then remaining of the same size, but hard and rigid. This was different, he thought, from retraction, and was rather tonic contraction than retraction. As regards polarity, a subject in which he was much interested, the action of opponents referred to by Dr. Horrocks was exemplified in the uterus by conditions involving a disturbance of the normal condition, in which consentaneous though opposite action in the upper and lower poles was observed. Such pathological conditions were incarceration of the placenta, after-pains, and probably some forms of dysmenorrhœa. These conditions are analogous to colic in other hollow muscular viscera, the pain being due to violent opposition on the part of opponents one of which should yield to the other, as in the case of the intestine.

Dr. Samuel Sloan thought it must be admitted that retraction differed from contraction, for after the uterus was partially or wholly emptied, we found it in the intervals of the pains free from the firm tonic condition indicative of contraction, and yet retracted because smaller. He thought morphia acted on the lower segment of the uterus exactly in the opposite manner from ergot, namely, by causing inhibition of this portion and thus accelerating dilatation when, notwithstanding severe pains,

this was not progressing satisfactorily. He suggested that the great mental distress so often observed in unmarried women in our Maternities might, by diminishing the normal retraction during the puerperal state, favour the absorption of uterine discharges and thus induce puerperal fever.

Dr. Dyce Brown said that some light might be thrown on the question whether ergot caused contraction or retraction of uterine muscular fibre by noticing its action, in small doses, in the treatment of threatened abortion, and in the prevention of habitual abortion. In the former, the uterine contractions can be stopped, and the patient recover, if the case is not too far advanced to permit of recovery; while in the latter, the habitual tendency to abort can be cured. On the principle of the double action of medicines, these facts may elucidate the point at issue.

Dr. Roper remarked on the difficulty in separating retraction from contraction. Retraction could not, he thought, occur without antecedent contraction. By retraction of a uterine muscular fibre was meant a persistent contraction of the muscular fibre after contraction has ceased; that is, that the muscular fibre, at the end of the contraction, did not return to its original length, but remained shortened and continued to become shorter with each contraction. At the end of a contraction of a uterine muscular fibre there was no return to the original state or to a state of relaxation as in the voluntary muscular fibre. On this view contraction is the cause of retraction and no retraction can take place without previous contraction. It did not seem possible that retraction could take place except by antecedent contraction; retraction, therefore, could never precede or cause contraction. The first effect of ergot was to produce contraction of the uterine muscular fibre, followed by a degree of retraction corresponding to the potency of its stimulation. Ergot interrupted the rhythm of the uterus, produced a tonic spasm of its muscular fibres, both of the body and cervix of the uterus. It seemed questionable whether the contraction of the cervix and lower segment of the uterus depended on the interruption of the inhibition of these particular structures or on its direct stimulation of them by ergot.

Dr. Perigal said, I should like, sir, to ask Dr. Duncan what is the explanation of the action of ergot given in fairly large doses to restrain hæmorrhage, when that action seems expended on the lower zone of the uterus and cervix, stopping the bleeding but allowing the body of the uterus to escape and thereby retaining a clot. I have had several cases under my care lately where I noticed this, subsequent pain setting in, and eventually a large clot being expelled. The action of the ergot seemed expended on the lower zone and cervix only, the body of the womb being only partially if at all acted on.

Dr. MATTHEWS DUNCAN was much gratified with the critical remarks on his paper. It was plain from them that there was much need for drawing attention to the great and long recognised, but yet little known, difference between contraction proper and retraction. He could not recognise in ergot the power to induce labour or miscarriage except in an indirect and uncertain way. It was common to hear of great pains induced by ergot, but he had not seen them. We much wanted a medicine which had that power, a want not yet supplied.

A CASE OF SEROUS PERIMETRITIS.

By Amand Routh, M.D., B.S., M.R.C.P.,

ASSISTANT OBSTETRIC PHYSICIAN CHARING CROSS HOSPITAL; PHYSICIAN SAMARITAN FREE HOSPITAL.

On October 24th last, E. S—, æt. 27, unmarried, came to the out-patient department of the Samaritan Hospital, complaining of backache and leucorrhœa, with constant headache, dyspepsia, and depression of spirits. She dates all these symptoms from her first and only confinement, eighteen months before. The physical signs point to sub-involution of the uterus, which is three and a quarter inches long, heavy, globular, and low in the pelvis, with a capacious cavity. The cervix is slightly fissured to the right, and there is some ectropion of the lips of the cervix on the right side, and much endocervical catarrh.

October 31st.—Came again, feeling better, but as the catamenia were present no examination was made.

November 7th.—The patient was led into the out-patient department, prostrate and pallid, saying she had caught cold on her way home that day last week, having had to wait a long time in a draughty station on a cold raw day.

She states that on the evening of October 31st she felt very poorly with nausea, diarrhœa, and coccygodynia, and that her catamenia prematurely ceased. Next day she had "the cold shivers," which have been repeated several times since.

On examination, the uterus was found fixed, high up, and to the right of its normal position. Douglas's pouch and the true pelvis behind the left broad ligament were occupied by a hard mass, which caused bulging downwards

of Douglas's pouch, and reached upwards into the hypogastric and left ovarian regions, where a hard, solid, lobulated lump could be felt. This mass gave a *comparatively* dull percussion-note, but was resonant on deep percussion, which was extremely painful. Pressure upon this abdominal mass was readily conveyed to the finger examining per vaginam.

The right side of the pelvis and the utero-vesical pouch were free from inflammatory deposit.

The urine had a sp. gr. 1022, was acid, and free from albumen or sugar.

Pulse 112, hard and regular, temperature 99·4° (vagina).

November 9th.—Admitted yesterday into the hospital. Two distinct areas of fluctuation can to-day be felt, one low down in Douglas's pouch (the fluid causing much bulging into the vagina), the other at a higher level, just behind the left broad ligament. After sponging out the vagina with Liquor Hydrarg. Perchlor. the aspirator was used, and three and a half and one and a half ounces of perfectly clear serum were drawn from the two places respectively. The last few drops which came away were blood-stained. Temperature in vagina 99·6°

10th.—Patient much easier, had a good night, pulse 100, temp. 99°. Some induration high up, just behind the right broad ligament. My father kindly saw the case to-day with me.

13th.—Pelvic hardness less, and more lobulated ; abdominal mass less.

17th.—Absorption of pelvic mass steadily progressing. Uterus is being drawn backwards and towards the left side by the contracting adhesion. A sense of deep-seated resistance alone remains, where the abdominal mass could previously be felt. Fundus uteri is moveable and anteverted. Still some pain down inside and back of left leg. There is some fluid to-day in Douglas's pouch, which, however, is not tense as it was before.

20th.—Uterus is sinking lower in the pelvis, and is uniformly more moveable. The retro-uterine mass is

harder, less regular in outline, but more defined. No fluid in Douglas's pouch.

26th.—Temperature this morning went up to 100° F. from normal, with some pain in left ovarian region. Catamenia, however, came on in a few hours, painlessly, and in the evening the temperature was again normal.

December 4th.—Catamenia have ceased; still a little hardness high up in Douglas's pouch. The utero-sacral folds of peritoneum are easily felt, being thickened and semi-rigid.

The *treatment*, after aspiration, was rest, hot fomentations, hot (105° F.) vaginal injections of iodine and water, and a mixture of Liq. Hydrarg. Perchlor. ʒj, and Liq. Ferri Perchlor. ɱx, Aq. Chlorof. ad ℥j, t. d. s., and the bowels were relieved daily.

My colleagues, Drs. Prickett and Griffith, also kindly saw the case with me.

Remarks.—Since Dr. John Williams drew the attention of the profession specially to the subject of serous perimetritis, some cases have been recorded tending to show that they are not so rare as was at first believed.

Reasoning from the analogy of the inflammation of other serous membranes, it seems probable that if the aspirator were used in all cases of perimetritis where fluctuation was obtained, with due antiseptic precautions, we should frequently get serum instead of pus, as in this case, and should then be at once able to give a more favourable prognosis, both as regards duration of illness and chance of complete convalescence. Dr. Matthews Duncan has shown that although the physical signs point mainly to perimetritis, the metritis as the pathological cause must not be lost sight of. In these cases of adhesive or serous perimetritis, the lymph seems primarily deposited upon the peritoneum covering the upper and posterior parts of the fundus uteri, and upon the posterior part of one or both broad ligaments (usually the left). This peritonitis may be, apparently, caused either by extension of inflammation through the uterine walls, or

along the Fallopian tubes (salpingitis). I have seen two post-mortem examinations upon patients with subacute metritis, the patients having died of some concurrent disease, where the upper and posterior surfaces of the uterus and the coils of intestines in contact were coated with lymph, the broad ligaments being free.

Having once reached the peritoneum by either of these routes, the inflammation spreads by continuity of tissue along the visceral and parietal folds of serous membrane, limited almost always in front by the broad ligaments (which may be bulged forwards), and spreading upwards into the abdomen along the coils of small intestine.

The intestines thus matted together, whilst giving the sensation of a hard solid mass when examined with one hand, may also, when examined bimanually, give such a sense of elasticity from the contained flatus and fluid as to very closely simulate fluctuation. The size of the tumour thus formed, varies considerably within a few hours' time, according to the distension of the coils of intestine forming it.

In the 'British Medical Journal' for November 7th last, Mr. Burton, of the Hospital for Women, Liverpool, relates an interesting case of serous perimetritis, and in his remarks he appears to think that such cases are cases of hæmatocele. This seems to me improbable, indeed, I believe, on the contrary, that the evidence tends to show that cases of serous perimetritis are sometimes, perhaps often, diagnosed erroneously as hæmatoceles.

In both the above case, and Mr. Burton's, the surface of the body was chilled during a process of especial physiological activity (menstruation) of the pelvic organs. In his case the patient took a cold bath, and in mine she was exposed to the draughts of a station platform on a cold raw day. In both cases the chill, acting through the vaso-motor nerves, changed the physiological uterine congestion into inflammation (metritis) and the uterine function was arrested, the perimetritis following, as before said, by extension of inflammation.

The serous effusion seems to continue to be poured out after the lymph exudation has fixed the viscera, so that the serum has to make a place for itself by distending that part (the lowest part) of Douglas's pouch unoccupied by the matted small intestines. In one of Dr. Williams' cases the distension of Douglas's pouch downwards was so great as to present at the vulva like a rectocele; and in Dr. Matthews Duncan's clinical lectures the author describes a case where the pelvic tumour caused the perineum to bulge and the rectum at the anus to be partially everted. In my own case the serous effusion was slight.

Mr. DORAN observed that Dr. Amand Routh's case tended to prove the true signification of the term "serous perimetritis." Some irritant material, from the tubes or elsewhere, set up pelvic peritonitis. The uterus, tubes, and intestines happened to adhere in such a manner as to cut off a segment of peritoneum from the general peritoneal cavity. This was the first essential condition. The inflammatory process not being of a low type, serum instead of pus became effused into the occluded portion of the peritoneal sac. This was the remaining essential feature in that accidental variety of pelvic peritonitis conveniently termed serous perimetritis. The absence of high temperature was instructive in relation to the characteristic absence of suppuration. Mr. Doran could not quite understand Dr. Routh's theory about the share which the posterior part of the broad ligament might take in this disease. Those who had carefully examined the internal organs in the post-mortem room could testify that the conventional ideas about the position of the tube and broad ligament were quite erroneous. The inner two thirds of the tube made a curve with its convexity backwards, so that the so-called anterior surface of the broad ligament looked as much upwards as forwards, whilst the posterior lay on the ovary. Thus in pelvic inflammation the rapid matting together of tube, ovary, and broad ligament without any previous pathological displacement drawing them together could be easily explained. The fimbriæ lay mostly outside and below the ovary, the long or ovarian fimbria ascending the outer surface of the ovary. Mr. Doran admitted that real displacement of the broad ligament might take place in pelvic peritonitis. Thus a coil of intestine might bulge against and push up the tube, and so come in contact with the broad ligament, with which it might then contract adhesions.

Mr. KNOWSLEY THORNTON wished to emphasize the remarks which had been made as to inflammation in these cases forming serum and stopping short of pus formation, and to point to the

analogous conditions frequently seen in the pleura. If advantage was taken of this milder form of inflammation, and the serum was evacuated without the admission of any fresh causes of irritation and inflammation, then tension and suppuration were avoided with their attendant dangers. But in the earlier cases of this disease, whenever, or almost whenever, aspiration or tapping was used, suppuration followed, and generally death, just as used to be frequently the case with simple pleuritic effusions which were made suppurative by the admission of air or by the use of imperfectly cleaned tapping instruments and consequent putridity. The great fact brought out by Dr. Amand Routh's case was that, properly performed, aspiration was the most speedy cure for serous perimetritis, just as it is the most speedy cure for serous pleuritis. The difference in the result was to be found in the careful antiseptic precautions which Dr. Routh had taken and described—vagina cleansed with corrosive sublimate, clean aspirator, and vagina packed with iodoform gauze to receive any after-leakage. Had he with his aspirator introduced putridity into the peritoneal sac, suppuration instead of cure would have resulted, and everyone knows what follows putrid suppuration in a confined space without adequate drainage, and in these cases the danger is accentuated by the walls of the cavity being formed by adhesion of important and sensitive organs, with the risk that their adhesions will break down and communication with the general peritoneal cavity result.

JUNE 2ND, 1886.

JNO. B. POTTER, M.D., President, in the Chair.

Present—36 Fellows and 4 visitors.

Books were presented by Dr. Aveling, Dr. A. Martin, Dr. Murphy and the American Gynæcological Society.

Charles Owen Fowler, M.D.Brussels, and William Edward Steavenson, M.D.Cantab., were admitted Fellows of the Society.

John W. Byers, M.A., M.D. (Belfast) was declared admitted.

The following gentlemen were elected Fellows of the Society :—Tom Bates, L.R.C.P.Ed. (Worcester) ; Joshua John Cox, M.D.Ed. (Manchester) ; Archibald Donald, M.A., M.B.Ed. (Manchester) ; Arthur Andrew Jamison, M.D.Glas. (St. Helen's) ; William Owen Jones, M.R.C.S. (Manchester) ; Alfred Edmund Kennedy, L.R.C.P.Ed. (Plaistow) ; William Lauder, M.B.Ed. (Manchester) ; Arthur Matthey, L.R.C.P.Ed. (Croydon) ; Herbert Smith Renshaw, M.D.St.And. (Manchester) ; Arthur Edwin Sutcliffe, M.R.C.S. (Manchester) ; Walter Reginald Tuckett, M.R.C.S. (Bath) ; and Arthur Thomas Winterbottom L.R.C.P.Ed. (Swinton).

The following gentlemen were proposed for election :— Hunter Jackson Barron, M.D.Ed. ; Richard Broughton Bothamley, M.R.C.S. (Bromley) ; Arthur Bristowe Car-

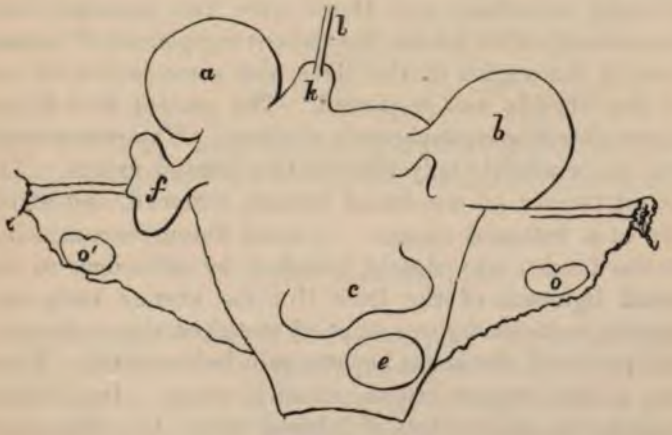
penter, M.A., M.B.Oxon. (Croydon); Charles William Chapman, L.R.C.P.Lond. (Shepherd's Bush); David Fennell, L.K.Q.C.P.I.; Herbert Alfred Hill Fenton, M.D.Brussels; Ernest Harding Freeland, L.R.C.P.Lond.; Ernest Carrick Freeman, L.R.C.P.Lond.; Henry Croker Garde, L.R.C.P.Ed. (Queensland); Henry Nelson Holberton, L.R.C.P.Lond. (East Molesey); Charles John Jacomb-Hood, L.R.C.P.; William McMullen, L.K.Q.C.P.; Shadforth Morton, M.D.Durham (Croydon); Arthur Wesley Oyle, L.R.C.P.Lond.; Frederick Arthur Thomas O'Meara, L.R.C.P.; Thomas Alex. Papillon, L.R.C.P.Ed. (Oakham); Henry J. Prangley, L.R.C.P.Lond (Anerley); Thomas Arthur Richardson, M.R.C.S. (Croydon); Frank Rushworth, M.B.Lond.; Bernard Charles Scott, M.R.C.S. (Penge); Samuel Parsons Smith, L.K.Q.C.P. (Croydon); and George Stephen Ware, L.R.C.P.Lond.

MULTIPLE FIBROMYOMATA COMPLICATING A TWIN PREGNANCY.

By John Phillips, B.A., M.B.Cantab., M.R.C.P.

Dr. John Phillips showed a uterus with this complication. The history of the case was as follows:—The patient, a primipara, aged thirty-six years, was first seen when slightly over seven months pregnant. There was no previous history of enlargement of the abdomen, menorrhagia or dysmenorrhœa. Her abdomen was much distended, and she had been compelled to keep her bed for three weeks. In the right hypochondrium was a tumour the size of a fœtal head, mobile and painless (*a*); a similar one could be felt, but deeper down in the left side (*b*). Slightly to the left of this latter was what was taken for a breech and which turned out to be so, and belonged to the first child. Below the umbilicus

was a bilobed body (*c*), apparently another breech, while in the left inguinal region was a semisolid tumour, not mobile, but very tender on pressure (*e*). There was marked supra-pubic œdema. Per vaginam, in the anterior cul-de-sac was a mass blocking up the anterior third of the pelvis, and evidently the lower portion of the tumour last mentioned. Behind but considerably above this was a freely mobile fœtal head. At no time was any fœtal heart-sound to be detected. On handling any of these tumours, and spontaneously at irregular intervals, they would harden and stand out more prominently. It was



therefore thought that they were fœtal extremities surrounded by a very thin-walled uterus. A diagnosis, therefore, of triplets with a fibromyoma in the anterior wall was made. Four days later she was seized with considerable pain in the left side, which did not give way under morphia. Her pulse and temperature rose to 120 and $101\frac{2}{5}^{\circ}$ respectively. The tongue dry and brown, and her facies very anxious. The abdominal wall was becoming of a purplish-red colour. Labour was therefore induced by passing a gum-elastic catheter between the membranes and the uterine wall. The small head became

engaged in the pelvis, and after a very prolonged expulsive stage (during which the tumour was from time to time pushed out of the way) passed into the vagina. As she was becoming much exhausted, forceps was applied on the perineum. A breech was now detected presenting; another trilobed body (*f*) could be felt below and to the right of the first tumour (*a*), and the breech in the left side had disappeared. Labour pains came on again in two hours time, and another female, stillborn, was expelled. The placenta came away without any hæmorrhage, and the uterine cavity remained quite small. There was a single, bilobed placenta, the cords were separate and centrally attached, and there were two amniotic sacs. Immediately after labour the patient complained of intense pain in the region of the liver, and some torsion of one of the fibroids was suspected. The patient died fifteen hours after labour, apparently of shock. The post-mortem was unfortunately only allowed to a limited extent. The lowest tumour (*e*) was found bruised, softened, and of the size of a flattened orange. A small fibromyoma attached to the fundus was closely attached by adhesions to the round ligament of the liver (*l*); the uterine body contracting as its cavity was emptied stretched these adhesions and produced the acute hepatic pain before death. There was a true corpus luteum in each ovary. Dr. Phillips thought the chief points of interest were: 1st. The occurrence of the contractions of the tumours already alluded to. 2nd. The entire absence of hæmorrhage, which could only be accounted for by the placenta being situated on a healthy portion of the uterine wall, and not over one of the tumours. 3rd. The situation of the obstructing tumour in the pelvis would have prohibited Porro's operation. No alternative was left therefore between induction of premature labour and the Cæsarian operation. Out of seven cases of this kind on record, there were five deaths, while McClintock's fatal case of triplets was well known. The author thought that the prognosis was much more grave in a multiple than in a single pregnancy.

Dr. M. Handfield-Jones agreed with Dr. Phillips that the site of the placenta was of the greatest importance with reference to the probability of post-partum hæmorrhage. In a case that had lately come under his notice death had occurred from very severe post-partum hæmorrhage, and the placenta was found post-mortem to have been implanted over the site of a large fibroid. In Dr. Phillips's case the placenta had doubtless not been attached over the situation of the tumour, and post-partum hæmorrhage had been absent.

In reply, Dr. Phillips said that when the uterus was distorted by fibroids the placenta was apt to assume an abnormal implantation, being prævia, or often over a fibroid itself; in such cases hæmorrhage was frequently fatal. He felt it was entirely due to the placenta being inserted where it was that no hæmorrhage took place.

FŒTUS AND PLACENTA OF EXTRA-UTERINE GESTATION REMOVED BY ABDOMINAL SECTION.

By G. Ernest Herman, M.B.

Dr. Herman exhibited this specimen. The patient had ceased to menstruate at the beginning of May, 1885. In the middle of June she had symptoms which, from her own account, resembled those of pelvic peritonitis, and had what she thought was a miscarriage. In February, 1886, spurious labour came on. On May 7th abdominal section was performed by Dr. Herman, and the fœtus with its membranes and the placenta removed.

On opening the abdomen, the fœtus was found enveloped in its membranes, the liquor amnii completely absorbed, and the membranes closely adherent to the fœtus. There were some easily broken down adhesions between the fœtal membranes and the bowels, and when these had been torn through the fœtus was removed. The placenta formed an ovoid swelling rather larger than a fœtal head, which was attached to the anterior abdominal wall, the

anterior and upper surface of the bladder, and the left broad ligament. There were also some vascular adhesions between the placenta and the omentum. These were tied and divided. The adhesion between the placenta and the bladder and the anterior abdominal wall was carefully separated by tearing, the relations of the bladder having been first ascertained by a sound passed into it. One bleeding point on the adherent surface of the bladder required ligature. A blunt pedicle needle was passed through the left broad ligament (from which the placenta appeared to derive its chief vascular supply), it was tied in two parts, and the placenta then cut away. The uterus was behind and below the placenta and quite unconnected with it. The placenta was not attached to the left ovary, but its attachment extended so close to the ovary that this organ had to be included in the part separated by the ligature. The operation was performed with antiseptic precautions. The patient perfectly recovered.

The fœtus, a male, weighed 3 lbs. 8 oz. It was compressed and flattened at the parts subject to mutual pressure, but presented no other signs of decomposition.

The placenta weighed 28½ oz. The umbilical cord was shrivelled to a mere thread. The placenta was a soft spongy mass, ovoid in shape, and covered externally by smooth membrane. On section it seemed as if formed of placental tissue with extravasated blood in the spaces between the vascular tufts.

Mr. Alban Doran said that no two cases of extra-uterine pregnancy were alike. At any particular operation, it was often very difficult to ascertain whether the fœtal sac could safely be removed. In a case which occurred in his own practice, and which he intended to relate before the Society, the cyst, when exposed, so closely resembled a malignant ovarian tumour that he was afraid to cut into it in case uncontrollable hæmorrhage might be caused. It was not until several close adhesions had been broken down and injury done to the intestine that the sac was found to contain a fœtus. The patient died. No doubt it would have been safe to follow Mr. Tait's principles

and to open the sac which proved, in this case, irremoveable, only it was certain that the sac and placenta was in some cases removeable, and they were better out than in.

Dr. HERMAN said that there were great differences between different cases of extra-uterine gestation, and general rules drawn from statistical tables framed from a number of miscellaneous cases ought not to be applied to individual cases without discrimination. In the present case he attributed the possibility of removing the placenta and the favourable result of that practice to the peculiar shape and condition of the placenta. Cases like this, in which the placenta formed a solid mass, attached over a comparatively small area, ought to be separated, so far as the method of operative treatment was concerned, from those in which the placenta was thin and spread out over a large area. Cases of the former kind, he thought, were rare; but it was in them that removal of the placenta was possible, and where possible, it was clearly advantageous.

NOTE ON THE ARTIFICIAL PRODUCTION OF SO-CALLED LYMPHATIC VARIX.

By Francis Henry Champneys, M.A., M.B.Oxon., F.R.C.P.,
obstetric physician to st. george's hospital.

In vol. xxiii of the 'Obstetrical Transactions' will be found (p. 132) a paper by Dr. Matthews Duncan on a "Case of Phlegmasia Dolens with Lymphatic Varix," with a plate.

The case was one of malignant disease in the pelvis, with phlegmasia dolens of the left leg, and a patch of "distended lymphatics" in the skin of the upper and outer anterior surface of the left thigh. "The projecting vessels, covered by epidermis, having a yellowish-white tint and pearly lustre, were seen and felt, and the prick of the small point of a knife allowed a large drop of limpid lymph to immediately exude."

As the phlegmasia subsided in the left leg it began in the right, and in the skin of the right thigh, exactly corresponding to the patch on the left, a patch of "spindle-shaped, ribbon-like skin cracks" became transformed into lymphatic varices like those on the left.

Dr. Duncan remarks: "It seems highly probable that the mechanical weakening of the skin, as of a bandage, which should be uniformly strained and uniformly support subjacent parts, was a predisposing cause of the lymphangiectasis in their special situation. Lastly, it is highly probable that this visible lymphangiectasis was not the result of any special inflammation or obstruction to the course of the lymph in these parts, but that the obstruction was general in the limb and produced visible lymphangiectasis where the skin, as aforesaid, was

weakened by skin-cracks. Had there been skin-cracks elsewhere in the limbs we should have expected lymphangiectasis in the same places. Probably the whole lymphatics of the limbs were distended, but became visibly varicose at the affected parts, because there imperfectly supported. . . . . Similar transformations of skin-cracks, or the simultaneous occurrence of skin-cracking and lymphatic distension, are often observed in the skin of the abdomen of pregnant women and elsewhere."

I had the advantage of seeing Dr. Duncan's case, and had no doubt that the above explanation was correct. I therefore determined to see whether "lymphatic varices" could not be produced at will by the simple expedient of cupping the skin-cracks in lying-in women. If this succeeded, it would evidently be due to a general œdema showing most plainly over the least supported parts of the skin, and not to any peculiar arrangement of lymphatics, nor to obstruction of any particular lymphatic trunks. In this case "lymphatic varix" would be a somewhat misleading term.

The experiment succeeded perfectly, as the following cases show.

No. 46.—Admitted to the General Lying-in Hospital March 20th, 1882, æt. 33, 7-para. On the tenth day after delivery a cupping-glass was applied to some pale ribbon-cracks on the outer side of the left thigh, especially to two large ones. The striæ were depressed as usual. When the glass had been applied, the striæ around the glass, and crossed by its edge, were seen to swell up. There was some œdema produced in those beneath the glass, but less.

No. 48.—Admitted March 22nd, 1882, æt. 20; 1-para. On the seventh day a cupping-glass was applied to some loose and depressed striæ on the outer part of the right thigh. After cupping, no depression could any longer be felt over the site of these ribbon-cracks, but on the other hand no œdema. Their colour denoted ecchymosis, being livid and bluish. Two petechial marks about the size of

a pin's head appeared, and the skin over one of the striæ gave way.

In these two cases I cupped the striæ by dipping a piece of blotting paper in spirit, lighting it, putting it into the glass, and applying the glass. The effect thus produced is great and sudden.

In the following cases Dr. Boxall (house physician) cupped the striæ by applying a heated glass, the effect of which is less strong and more gradual. It will be observed that in both these cases there was no œdema present. In the first, however, the striæ crossed by the edge of the cupping-glass became convex, pearly, and moniliform, and exactly resembled those of Dr. Duncan's case of "lymphatic varix" in these respects.

The reason why the striæ around the edge of the glass became distended is probably that the lymph channels in question are the superficial cutaneous and subcutaneous lymph spaces; the lymph was drawn horizontally towards the cupping-glass, but obstructed by its edge, which was firmly pressed by the atmospheric pressure. Had the lymph been derived from the deeper parts, the striæ beneath the glass rather than around it would have been œdematous.

In the second case, the result was less satisfactory, little being produced beyond a slight filling up of the depressed ribbon-cracks beneath the cupping-glass.

It was determined, therefore, to choose such cases as had evidence of œdema, and to cup the striæ before delivery, as the œdema often rapidly subsides after delivery.

The result was in every case successful as the following cases show:

No. 131.—Admitted June 21st, 1884, æt. 25, 4-para. On admission there was considerable œdema of feet, legs, and part of abdominal walls. On the abdominal walls are many pale œdematous striæ, vertical in direction below the navel, and more or less transverse above. Some of the pale ribbon-cracks on the abdomen which were not œdematous were "cupped," and immediately became œdematous like the others.

No. 162.—Admitted July 18th, 1885, æt. 37, 10-para. On admission there was considerable œdema of the legs, feet, and abdominal walls. On the abdomen were a considerable number of pale, vertically arranged, rather small ribbon-cracks, extending from the pubes to two inches above the navel; those within three inches of the pubes were œdematous. A cupping-glass was applied to those which were not œdematous, and these became œdematous.

No. 180.—Admitted August 8th, 1884, æt. 22, 1-para. A week before admission the patient was found to be suffering from chronic nephritis. There was considerable œdema of the feet and face; slight œdema of the right labium majus and of part of the abdominal walls. There were many well-marked blue ribbon-cracks running vertically below the navel, and others elsewhere in other directions. On applying the cupping-glass to some of those not œdematous, they became œdematous, and also for ¼ inch round the cupping-glass.

No. 212.—Admitted September 6th, 1884, æt. 15, 1-para. On admission there was slight œdema of the ankles, considerable œdema of the abdominal walls. Some of the blue ribbon-cracks on the abdomen which were not œdematous were cupped, and became œdematous with slight extravasation of blood, and in one place a bleb the size of a threepenny piece formed and then ruptured. The œdema was well marked in the striæ ¼—⅜ inch outside the cupping-glass. The contents of one of these striæ not tinged with blood were put under the microscope, and presented a few cells like white blood-corpuscles. In the last four cases, the œdema was especially apparent in the striæ beneath the glass, though also in those around it. The difference probably consisted in the mode of cupping, as above explained.

The production of blebs of blood over the blue ribbon-cracks must be noted. The blood became extravasated by the pressure which produced the "lymphatic varix."

The result seems to show that "lymphatic varix" and

"distended lymphatics" are the result, not of any special arrangement of the lymphatic vessels corresponding to the site of the peculiar appearances, but to general œdema, projecting most at the least supported parts of the skin. In this case the accepted names for the condition would seem to be misleading.

The above small contribution is offered to a subject which is very imperfectly understood. The whole subject of skin-cracks is surrounded with difficulties, and the exact nature of the changes is not settled.

As regards lymphatic varix, the same may be said, but it may be observed that the lymphatic vessels of the thigh are scantily distributed over the anterior and outer aspect, (where these so-called "lymphatic varices" are numerous), and are numerous about the saphenous opening and inguinal region (where these so-called "lymphatic varices" are scanty or absent). In their direction also they differ, these so-called "lymphatic varices" running parallel with the long axis of the limb, whereas the lymphatic vessels converge towards the glands about the saphenous opening and inguinal region. Thus they differ from each other, both in situation and direction. They also differ from the cases of undoubted varicosity of lymphatic vessels on record, for these follow the known course and distribution of the lymphatic vessels.

The same may be said of the lymphatics of the lower abdominal wall which converge towards the groin.

The moniliform appearance over the thighs which might be taken as indicative of true lymphatic vessels is equally well explained by the known shape of the skin-cracks in these regions.

The above experiments confirm the opinion expressed by Matthews Duncan and quoted above, and indeed prove it to demonstration.

Dr. HERMAN said that Dr. Champneys had spoken in his paper of "lymphatic œdema," and in his remarks of "œdema." He asked whether this alternative mode of expression was simply employed for brevity, or whether it indicated the author's view

as to the nature of the fluid filling the cracks. He believed, in common with many others, that in phlegmasia dolens there was not simply ordinary œdema from venous obstruction, but that there was obstruction in the lymphatic system of the limb. There was little direct proof of this, but there was strong arguments from analogy in favour of it. He had looked on Dr. Duncan's case as an important one, because if the fluid in the varicose skin-cracks were lymph it furnished some direct evidence that there was obstruction to the return of lymph from the limb. He asked whether Dr. Champneys was of opinion that his experiments had any bearing on this question? When he spoke of œdema, did he mean merely the kind of swelling that resulted from altered pressure relations in the capillaries, such as resulted from venous obstruction, or could be produced anywhere by a cupping-glass? Or did he mean by "lymphatic œdema" that in his opinion the fluid was lymph and had been exuded from lymphatic vessels?

Dr. M. Handfield-Jones called Dr. Champneys' attention to three cases of dilatation of lymphatic radicles which had occurred in St. Mary's Hospital, and notes of which were published in the 'Lancet' for August 7th, 1875. These cases closely resembled the case published by Dr. Matthews Duncan in the 'Obstetrical Transactions.' Following the history of these cases it would seem that mere œdema alone was not sufficient to produce the appearances described. In Dr. M. Handfield-Jones's opinion some active pathological change attacked the small lymph-spaces from which the lymphatic channels started and spread from thence along the larger canals. It was certainly noteworthy that, considering the frequency of œdema of the lower limbs, the appearances described in the cases referred to were rare.

In reply, Dr. Champneys said that his paper was an argument that the so-called "lymphatic œdema" was not a special affection of lymphatic vessels, but was merely a general œdema, showing most plainly at the weakest parts of the skin. Dr. Matthews Duncan had expressed this opinion in the words quoted from Dr. Duncan's paper, and Dr. Champneys had endeavoured to prove by experiment the correctness of this opinion.

NOTE ON ONE OF THE CAUSES OF DIFFICULTY IN TURNING, WITH REMARKS ON THE PRACTICE OF AMPUTATING THE PROCIDENT ARM.

By G. Ernest Herman, M.B.Lond., F.R.C.P.,

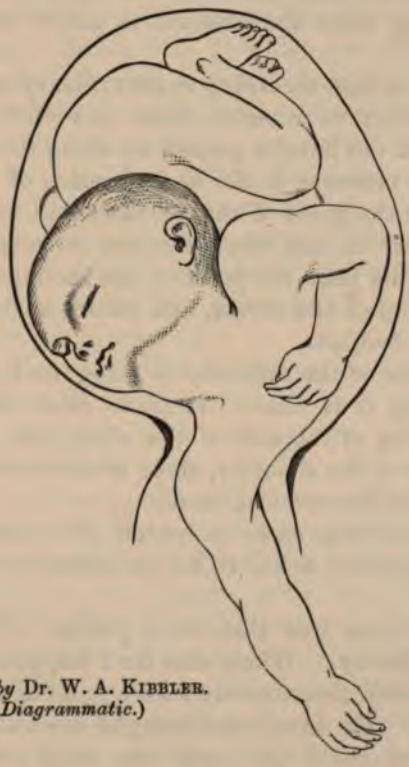
OBSTETRIC PHYSICIAN TO THE LONDON HOSPITAL, AND LECTURER ON MIDWIFERY.

Turning in cases of transverse presentation is generally an easy operation; but it is sometimes very difficult. The difficult cases are those in which the liquor amnii has escaped, and the uterus, contracting round the body of the child, has forced the presenting part down into the pelvis. This state of things makes it difficult to pass up the hand and seize the foot, and also difficult to turn the child when the foot has been seized. The well-known method of overcoming the difficulty which is described in every text-book, is to put a noose round the foot, and by this noose pull at the lower extremity, while at the same time with the hand in the vagina the shoulder is pushed up.

The object of the present communication is to invite attention to certain difficult cases in which even this manœuvre will fail unless the pressure on the shoulder be applied in the proper way. I have not found any published description of this particular variety of difficult version, and therefore make it the subject of a brief note.

In these cases it is moderately easy to seize and bring down a foot. But this being done, and a noose put round the foot and pulled upon, efforts made in the ordinary way, that is, by pressure upwards on the shoulder or thorax, prove unavailing. The obstruction to rotation of the child is the projection of the point of the shoulder below the imperfectly dilated os uteri internum. (I use the term

"os uteri internum" in the old and commonly understood sense of a ring of contraction in the uterine canal situated higher up than the os externum.) The os uteri must be nearly fully dilated, for without considerable dilatation the shoulder cannot come down; or it may be that it has fully



Drawn by Dr. W. A. KIBBLER.
(*Diagrammatic.*)

dilated and then contracted again. However the constriction arise, there is present, two or three inches above the os externum, a ring where the uterine canal is smaller than at the parts above and below it. The arm having come down into the vagina, the scapula and clavicle lie across the cervical canal, the point of the shoulder presses against the cervix, and the os internum forms a ring which

encircles the shoulder, passing from the root of the neck round below the scapula (speaking with reference to the fœtus). The arm and scapula are thus below the ring formed by the os internum, which forms a sort of ridge projecting into the hollow between the neck and the point of the shoulder, being above the shoulder, and preventing it from rising when the attempt is made to rotate the child.

Attempts to turn according to the ordinary method make this obstruction to rotation more powerfully operative; because when the hand is passed up along the abdomen of the child its presence in the limited space of the cervical canal presses the point of the shoulder still more strongly against the cervix, and when pressure is made upwards on the thorax, this jams the point of the shoulder below the projecting ring of the cervix, and efforts at turning are in consequence fruitless.

If the cause of the difficulty is recognised, the method of overcoming it is clear. It is, to raise the shoulder, not by pushing at the side of the chest, but by pressure on the point of the shoulder, so as to move it towards the middle line of the cervical canal.

I have seen three cases in which the condition above described appeared to me to be the cause of difficulty in turning.

The first case was that of a patient of the Royal Maternity Charity. When sent for I happened to be out, and the midwife therefore sent for a neighbouring medical practitioner. He seized and brought down a foot without difficulty, but could not make the child rotate. After prolonged attempts, he sent for another medical man, of very large experience, and the patient being anæsthetised, both legs were brought down; but still the shoulder could not be moved up. After about three quarters of an hour's endeavour, the operation was desisted from, and I was again sent for. I found that the obstruction was that which I have above described; that the point of the shoulder was lodged below the projecting ring of the

internal os. I pressed the point of the shoulder towards the middle line of the cervical canal, while I pulled on the foot by means of a noose. The shoulder was thus liberated, the child rotated, and delivery was easily effected.

The next case in which I observed the same difficulty was also in the Royal Maternity Charity. Here, having seized a leg, I found that I could not make the child rotate. A careful examination showed me that it was the point of the shoulder projecting below the internal os which prevented the rotation of the child. Pressing this part away from the wall of the canal at the same time that I pulled upon the leg by means of a noose, turning was accomplished. On examination of the child the livid swelling of the shoulder showed where it had been encircled by the os, viz. in a line running so as to include within it the whole scapula.

The third case in which I have seen difficulty of this kind occurred in the practice of the Guy's Hospital Maternity Charity. The presentation being transverse the Obstetric Resident was sent for. He brought down a foot without much difficulty, but could not make the child rotate. Dr. Horrocks being at the time absent from town, I was sent for. I found the difficulty to be that described in the two former cases, viz. the hitching of the shoulder below the os internum. By pressing the point of the shoulder towards the middle line of the cervical canal, at the same time that I pulled on the foot by a noose, I was able to quickly turn and deliver. After the child was born, the swelling of the shoulder, bounded by a line passing below the scapula, showed the part that the os uteri had encircled.

Taking it for granted that the cases now described have been correctly interpreted, they throw light on some others, of which there are a sufficient number on record to establish the fact which they illustrate. I refer to cases in which turning has been facilitated by amputation of the procident arm. In the 'Edinburgh Medical Journal'

I find* a letter signed "X. Y. Z.," in which the writer, who says that he is a practitioner of forty-eight years' experience, describes a case in which after prolonged and repeated, but unsuccessful, attempts to turn, he amputated the arms with a scalpel, and when this had been done the child was easily turned. He goes on to say that he has adopted this plan on several occasions, and never had occasion to regret it. In the 'Annales de Gynécologie'† Dr. Pénard, of Rochefort, writes on the subject, and while condemning the practice so long as the child is alive, yet he finds there are cases in which, when the child is dead and version impracticable, and therefore embryotomy or decapitation seems called for, turning can be performed when the procident arm has been removed, and therefore he urges that, in such cases, amputation of the arm may be looked upon as a substitute for embryotomy. To Dr. Pénard's paper is appended a postscript by Dr. Pinard, of Paris, who says that he has seen this practice give good results in the hands of Œhler, Depaul, and Blot, and knows that many times Professor Pajot and Professor Stoltz have performed version in cases in which it had previously been thought impossible, after simply amputating the upper extremity. This statement, as far as I know, has not been contradicted by the persons to whom it refers. Wittcke‡ describes a case of transverse presentation with jamming of the shoulder into the pelvis, in which, after amputation of the arm, spontaneous version took place; and mentions two others, in which, after disarticulation of the shoulder, version, previously impossible, became easy. In the 'British Medical Journal' for April 2nd, 1881, p. 511, Mr. W. Donaldson advocates the removal of the bones of the arm and shoulder as a means of facilitating version, and says he has found it "extremely serviceable in many cases." At p. 720 of the same volume, Mr. T. Beaufoy Green describes a case in

* October, 1872, p. 381.

† December, 1879.

‡ Siebold's 'Journal für Geburtshülfe,' Band xvi, S. 584.

which, the shoulder being firmly wedged into the brim of the pelvis, and turning "quite impossible," he removed the arm and scapula, and was then able to turn.

I cannot imagine any way, except by some such mechanism as I have described in the first part of this communication, in which amputation of the arm can affect the ease or difficulty of performing version. If we assume that the obstacle to turning in the cases referred to in the latter part was the projection of the point of the shoulder below the imperfectly dilated internal os, then it is quite easy to understand how the amputation of the arm should free the shoulder and allow the child to be turned.

It is needless to point out the objections to the practice of amputation of the arm if the child be living. If my supposition as to the nature of the difficulty in the cases in which amputation of the arm has rendered turning easy be correct, this operation is unnecessary, as well as objectionable; for the difficulty can be surmounted in the manner I have pointed out. As a first step to delivery by embryotomy, for which purpose amputation of the arm has been often advocated by the older writers, it is less efficacious than decapitation; and, by depriving the operator of a good hold of the fœtus, makes the subsequent proceedings more difficult.

Notwithstanding that the objections to amputation of the procident arm as a preliminary to turning are so grave that it ought not to be done, yet there is good testimony to show that in some cases it is effectual in rendering turning easy, and I believe that these cases are such as have been described in the first part of this communication.

Dr. GALABIN said that he had often felt the ring of constriction caused by the internal os retracted above the level of the head, and rendering version difficult or impossible in head presentation. He scarcely thought, however, that it could ever form such a complete obstacle in shoulder presentation, because there could be no constriction above the shoulder at all comparable to the neck in head presentation; and he did not think therefore that the internal os could prevent the shoulder being pushed directly upward. It might, however prevent its

ascent when the attempt to turn was made by acting on both poles of the fœtus at once, in the way described by Dr. Herman, for this would require a movement of the shoulder, not directly upward, but upward and outward, and this would be more likely to be resisted by the projecting ring. He thought, at any rate, that the obstacle could not often prove insuperable. He had never had occasion to cut off the arm, or push the shoulder toward the centre in the way suggested by Dr. Herman, and he had only once met with a case in which it proved impossible to turn, and it was necessary to have recourse to decapitation or other form of embryotomy. In this instance a shoulder had been mistaken for a breech presentation; expectant treatment had been followed for two days; the fœtus had become decomposed, the uterus rigidly contracted round it. A leg could be secured, but came off at the thigh when traction was made, and thus version could not be completed. He believed that there was no instance in the records of the Guy's Hospital Charity in which version proved impossible and the alternative of embryotomy became necessary. Possibly the obstruction mentioned by Dr. Herman was overcome, without its existence being distinctly recognised by a plan which he had often adopted. In cases in which version by simple traction on the legs failed, and it became necessary to act on both poles of the fœtus, he had found it preferable in many cases not to make this action simultaneous, but *alternately* to pull down the leg and push up the shoulder. In this way the shoulder might probably be passed directly upward and not outward against the projecting internal os. He asked Dr. Herman whether, in his experience, he had found the expedient he described always successful in cases of difficult version, or whether recourse to embryotomy still ever proved necessary.

Dr. Champneys said he was acquainted with constriction of the neck of the fœtus by the lower uterine segment in cases of head presentation, impeding version, but not with constriction of the shoulder from the same cause.

Dr. Herman said that he did not assert that the condition described in his paper was the cause of difficulty in every case of difficult version; on the contrary, he thought it an occasional and rare source of difficulty. One characteristic feature of these cases was that there was little difficulty in bringing down the foot, but much in turning the child; while, where the uterus was contracted tonically round the child, there was difficulty in getting the foot. He agreed with Dr. Galabin, and had pointed out in his paper, that the difficulty described was augmented by pushing up the shoulder at the same time that the leg was pulled upon. But he did not think that it was entirely produced in this way, for the defined swelling of the shoulder which was present showed that it had been encircled for a considerable

time longer than was occupied by attempts at version. The existence of a ring of contraction above the shoulder was not a supposition only on his part; he had felt the ring. In turning, he adopted the practice which had been defended in a valuable paper communicated to the Society by Dr. Galabin, viz. of seizing the most easily accessible foot. He did not find that much force was required to liberate the shoulder in these cases; the important point was that it should be applied in the proper direction. Attempts at turning had been made in one of his cases for three quarters of an hour under anæsthesia. In the second, anæsthesia was not employed. As to the third, he did not remember.

FOUR CASES OF SPURIOUS HERMAPHRODITISM IN ONE FAMILY.

By John Phillips, B.A., M.B.Cantab., M.R.C.P.,
PHYSICIAN TO THE BRITISH LYING-IN HOSPITAL; SENIOR ASSISTANT PHYSICIAN, CHELSEA HOSPITAL FOR WOMEN.

Cases of spurious hermaphroditism in the male or female are not uncommon, but I have been unable to discover a case on record where details of family history or other facts were given to assist in elucidating the causes of this obscure deformity.

Recently I have had one of these abnormalities under my care and have had ample facilities for making a thorough investigation as regards its antecedents, and, moreover, of performing a post-mortem examination, the result of which I have the honour of laying before the Society this evening.

Mrs. E. C—, the mother, æt. 32, was delivered naturally at full time, without any untoward symptom, December 10th, 1885, this being her ninth pregnancy. She made a fair recovery,

The history of her previous pregnancies is as follows:

1st. A miscarriage at three and a half months, brought on by prolonged constipation which necessitated copious enemata for its relief.

2nd. Terminated at full time; a girl, who died in convulsions twelve and a half hours after birth. The labour was normal and easy.

3rd. Also at full time; a boy, now alive and well, aged ten years.

4th. At term; *hermaphrodite*, but in accordance with medical opinion it was christened a girl. This child

gradually wasted and died aged twenty-four days. The genital organs had much the appearance of those in the specimen. The mother was badly frightened by a runaway horse in her third month of pregnancy.

5th. Also at term; a boy, alive and well at present, aged seven years.

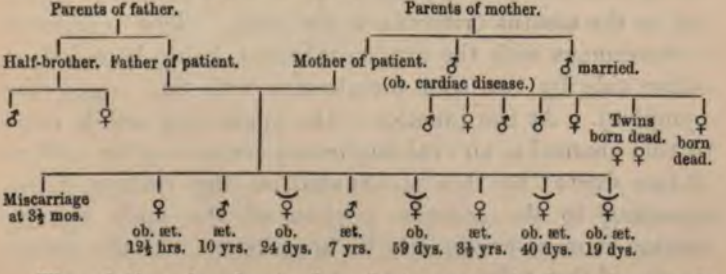
6th. Terminated at full time; *hermaphrodite*, similar to the previous one, and, like it, gradually wasted and died aged fifty-nine days. During the whole of this pregnancy the mother had been in great fear that the child would have some deformity of the genitals.

7th. At term; a girl, alive and well, aged three and a half years.

8th. Terminated at full time; *hermaphrodite*, and according to medical opinion was christened a boy. The scrotum was more closed up than the two former ones and the clitoris much larger. This child also wasted gradually and died aged forty days.

9th. At term; *hermaphrodite*, named as a boy. This child took the breast and kept well for a week as the others did; it then began to waste and died aged nineteen days. During this pregnancy the mother was greatly troubled about having children so often with this deformity.

Family history.—This I went into as thoroughly as possible, personally examining where feasible each individual. For the better understanding of the ramifications of the family I append a genealogical tree.



The *father* is short, five feet seven inches, but well

formed ; complexion and hair dark ; the right inguinal region bulges considerably, especially on coughing, and the abdominal wall is evidently very weak. The urethral meatus is prolonged downwards to join the frænum. According to Druitt it is very common for the last half inch of the urethra to be malformed.

The third child, a boy, is normal in every way ; the prepuce is of normal length.

The fifth child, also a boy, has the following peculiarity : on examining him I found, as I thought, the right testicle in the inguinal canal, but on relaxation of the cremasteric muscle it descended into the scrotum. He was able under the influence of fear to retract this testicle, but not the left ; his prepuce was of normal length.

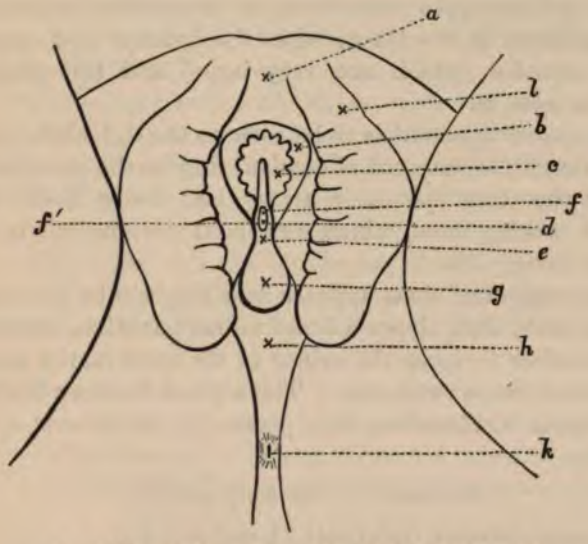
The seventh child, a girl, normal in every way ; clitoris small.

The *mother* had no peculiarity present.

Present condition of patient.—A well-nourished, plump child, weighing 6 lbs. 2 oz. ; the nails normally developed ; the breast is taken well and strongly.

The genitals are apparently those of a female, but with a very large clitoris. There are two well-developed external labia ; in their substance, and towards the inguinal canals, can be felt two small enlargements which might be prolapsed ovaries, undescended testicles, omental fat, or simply small masses of fibrous tissue. The clitoris, one and a quarter inches long, has a glans which is half covered by a mobile prepuce. The glans is grooved by a depression in its lower zone which is apparently perforated and corresponding to the meatus urinarius of the penis. This depression is continuous with the urogenital sinus, being bounded on either side by two thin membranes with fine edges (the nymphæ). At the junction of the upper and middle third of this channel is an oval depression containing the orifices of two ducts ; as this is situated on the surface corresponding to the anterior portion of the male spongy urethra it must necessarily be homologous with the lacuna magna of that tube.

On passing a catheter into the urogenital sinus it readily enters the bladder and posteriorly an apparent cul-de-sac could be easily felt. With the little finger in the rectum and the catheter as before in the bladder, a body of some thickness can be detected, probably uterus.



Genital organs from below, the clitoris slightly raised.

a. Clitoris.
b. Prepuce.
c. Glans.
d. Ducts opening into lacuna magna.
e. Groove leading into urogenital sinus.
ff′. Boundaries of groove (nymphæ).
g. Opening of urogenital sinus.
h. Perineum.
k. Anus.
l. External labium.

Post-mortem, thirty-six hours after death. The round ligament of the liver was found patent and admitted a small probe along its whole extent; the liver weighed seven and a half ounces. The surface arrangement of the viscera

was normal; the heart, lungs, and a large thymus were removed *en masse* and weighed five and a half ounces; the foramen ovale was patent, admitting a large-sized probe.

The pelvis, together with the last four vertebræ, was then removed after the plan recommended by Hart and Barbour.*

The pelvic organs were found to be entirely female, and the specimen shows them, with the kidneys and suprarenal capsules (which are very large) and the general vascular system.

The round ligament is to be seen on the right side passing through the internal abdominal ring, in the usual relation to the deep epigastric artery, and losing itself on a reddish looking mass, which was the thickening felt in the labium during life.

The urogenital sinus appears as a single tube for about half an inch, then shows a longitudinal partition, the anterior chamber forming the orifice of the urethra, the posterior that of the os externum. The septum between bladder and vagina is, therefore, only present in its *extreme upper portion.*

Diameters of the bony pelvis.

Antero-posterior (internal) $1\frac{1}{2}$ inches (+).
Between anterior superior iliac spines $3\frac{1}{8}$ inches (+).
From left anterior superior iliac spine to right sacro-iliac joint (external) $2\frac{1}{8}$ inches.
From right anterior superior iliac spine to left sacro-iliac joint $2\frac{1}{8}$ inches.

There was no divarication at the symphysis pubis, and no appearance of spina bifida. The arrangement of the peritoneum was normal with the exception of the great depth of the posterior cul-de-sac.

Following Simpson's classification, this case is evidently one of spurious hermaphroditism in the female. This malformation was recognised by the earliest observers; enlargement of the clitoris was, and doubtless now is, very common

* 'Edinburgh Medical and Surgical Journal,' 1885.

among Asiatic and African races, especially in Arabia; indeed, Albucasis* describes the necessary operation for its removal, thus preventing obstruction to coition and libidinous practices.

Martial† and Tertullian have noticed the malformation as occurring among the Romans, Aëtius and Paulus Æginetа‡ as being of great frequency among the Egyptians; the Greeks called patients with this deformity, tribades (τριβας).

Tulpius§ describes a case of this kind and concludes by saying that "this was in all respects a perfect woman, having only the clitoris half a finger's length."

Columbus‖ relates the history of an Æthiopian woman who was evidently a spurious female hermaphrodite, where "the clitoris did not exceed the size of one's little finger," and, he continues, "This wretch entreated me to cut off the penis, which she said would be a hindrance to her in coitus."

De Graaf¶ gives the history and post-mortem of a case where the clitoris was so large that it was mistaken for a male; while Ridanus**, discussing a similar case, says, "The clitoris sometimes grows inordinately long and counterfeits a penis."

Ambroise Paré†† thus defines the term "woman hermaphrodite:" "She has besides the vulva, which is well-formed and from which flows (?) semen and menses, a penis virilis situated above the said vulva near the groin without a preputium; but having a smooth skin, which cannot be turned back: without any erective power, from which

* Albucasis, chap. lxxi, "De cura Tentiginis."

† Martial, 'Epigram,' lib. i, ep. 91.

‡ Paulus Æginet., 'De re med.,' lib. vi, chap. lxix, "De Hermaphrod."

§ Tulpius, 'Observat. medicæ,' cap. 35, p. 241, 1650.

‖ 'De re Anatomicâ,' lib. xv, "Fœmina erat, Æthiopica mulier, &c."

¶ 'Opera omnia,' cap. iii, with plate.

** 'Enchiridium Anatomicum,' lib. ii, cap. xxxi, 'De part. genit.:' "clitoris prolongatur supra modum, mentiturque penem virilem."

†† 'Œuvres d'Ambroise Parée,' lib. 25, cap. vi (Lyons edition, 1141).

neither semen nor urine can pass and having no sign of a scrotum or testicles."

Caspar Bauhin* relates how one of these creatures, thinking she was a male, married a wife, but previously having had connection with a male, as a result became herself pregnant and was delivered of a daughter.

Dr. Parsons† in 1741 describes with figures, the external parts of generation of the "Angolan woman" whom he considers a female with an ovary prolapsed into the right labium and a similar organ undescended in the left groin; he also depicts a fœtus and describes the post-mortem of an undoubted spurious female hermaphrodite, and to which he gives the name "macroclitorideus."

The cases mentioned by Schneider,‡ Arnaud,§ Béclard,‖ and Gallay¶ are well known and are quoted in Simpson's** admirable article "Hermaphroditism."

Haller†† alludes to several cases, in two of which the clitoris was stated to be seven inches long, and he quotes Chabart as alleging a case with a clitoris twelve inches long.

O'Neill‡‡ describes a case with a post-mortem. The clitoris was five inches long and one inch thick; there was no urethra, but in its place a groove reaching from the glans penis to an oblique opening in the perineum. The (?) scrotum contained two hard bodies, supposed at the time to be testicles. The post-mortem showed that the internal organs were completely female although the ovaries were small. The right round ligament of the uterus was exceedingly thick and reached down to the

* Lib. i, 'De Hermaphrodite,' chap. xxxiii, 1609.

† Parsons, 'A Mechanical and Critical Enquiry into the Nature of Hermaphrod.,' p. 144.

‡ 'Jahrbücher der Staatsarzneikunde,' 1809, S. 193.

§ 'Dissertation sur les Hermaphrodites,' p. 265.

‖ 'Bulletin de la Faculté,' 1815, p. 273.

¶ Arnaud's 'Dissertation, &c.,' p. 309.

** 'Encyclopædia of Anatomy and Physiology,' 1839.

†† 'Elem. Phys.,' tom. vii, pt. ii, pp. 81, 82, 1671.

‡‡ 'Amer. Journal Med. Science,' 1851, vol. xxii, p. 558.

bottom of the (?) scrotum, where it was firmly attached. The hard bodies proved to be on the one side an irreducible and probably congenital omental hernia, and on the other a hardened mass, but no glandular structure was discovered. The age of the patient was between twenty-five and thirty years.

Astley Cooper* describes a case aged eighty-six. He says, "This woman differed from others in the magnitude and length of the clitoris, in the absence of the external orifice of the vagina, and in the imperfect development of the ovarium."

Ramsbotham†, Barnes,‡ Chalmers,§ and Sippel‖ each describe one, and de Gorrequer Griffith,¶ two cases, precisely similar to the one I have already given in full, the two last occurring in one family.

Litten** mentions a female with a clotoris three and a half inches long. She had right ovarian cystic disease; also two tumours, one at the upper part of the left labium and the other in the right inguinal canal. These turned out to be hydroceles of the processus vaginalis, although during life they were said to be ovaries and even testes.

Quite recently Pozzi†† has fully related the history of a family consisting at one time of nine individuals of whom the first is alive and well, is married and has four children; the second was christened a female but was probably a male, and died aged nineteen months; the third, fourth, and fifth were daughters quite normal who, however, died young; the sixth is also a daughter, choreic and feeble in intelligence, aged twenty-nine, with one illegitimate child; the seventh is a boy, married and quite normal; the eighth was christened a female, but when aged seventeen was

* 'Guy's Hosp. Reports,' 1840, p. 243.
† 'Medical Gazette,' 1833-34, vol. xiii, p. 184.
‡ 'Trans. Obstet. Society,' 1882, p. 188.
§ Ibid., p. 239.
‖ 'Archiv für Gynäkologie,' Band xiv, H. 1.
¶ 'British Med. Journ.,' 1877, vol. i, p. 108.
** 'Virchow's Archiv,' Band lxxv, p. 329, 1879-80.
†† 'Gaz. Méd. de Paris,' vii ser., tome ii, p. 109, 1885.

declared by the Faculty a male ; the ninth was christened a female, but at eighteen years of age the genitals were decided to be those of a male although the mammæ were very well developed. The remarkable similarity to the family history in my own case is at once apparent.

In a paper read before the Obstetrical Society Mr. Doran* narrated three cases with genealogical tables, where hernia or some similar condition was proved to be hereditary. The father of the case in question had a decided weakness of the abdominal wall, although scarcely amounting to a rupture. Might not then a man with a hernial tendency be prone to beget children with some other deformity not necessarily hernial ?

There appear to have been two causes at work on the mother's side for the production of the deformity :

1. The initial fright, which she received at the third month, when pregnant with the first hermaphrodite.

2. The continual dread and mental distress caused by bearing a deformed child, this naturally increasing with the birth of each child so deformed.

It is not until the third month that sexual differentiation commences, and even between the fifth and sixth months of intra-uterine life mistakes may readily occur from the close resemblance of the penis and clitoris at that period ; hence if from any reason development of the genitals be delayed in its course by some internal cause (maternal impressions, for instance) there is a distinct liability to some deformity resulting at birth.

From the preceding cases I think the following conclusions may be drawn :

1. That with hernial or other weakness present in one of the parents, acting as a predisposing cause, any deep maternal impression received about the third month of pregnancy may induce some impediment to the proper differentiation of the urogenital system.

2. That a distinct tendency towards bearing herma-

* 'Obstetrical Transactions,' 1884, p. 88.

phrodites may be developed in a mother who has already borne one of that class.

3. That, fortunately for the community, the survival of these creatures is not the rule, as they gradually waste and die of inanition a short time after birth.

Owing to the kindness of my friend Dr. Willcocks, I am enabled to show the Fellows a hypospadic male specimen, dissected in a similar manner to my own. The external parts are remarkably similar to those of the female hermaphrodite.

Dr. CHAMPNEYS quite agreed with Dr. Phillips as to the presence of hernia forming a chain in the series of correlated deformities. Malformations of the peritoneum are very common in these cases, and he had described such in a specimen of extroversion of the bladder in which the sex was doubtful, which he had shown before the Society. He could not, however, agree with Dr. Phillips that his case threw any light on the subject of maternal impressions; there was already sufficient cause without citing them here. He believed that few women passed through a pregnancy without "maternal impressions," which were only remembered if they happened to be verified. Indeed, *paternal* impressions were not unknown. Schneider records a case in which a man, whose wife was expecting her confinement, dreamt that his eldest son stood by his bedside with his genitals mutilated and bleeding. He awoke greatly alarmed. A few days later his wife was delivered of a child with extroversion of the bladder.

Dr. CLEVELAND, although aware of its merely negative bearing, mentioned that he had a patient with but one testicle descended, who was the father of a large family, but none of these were malformed.

Dr. M. HANDFIELD-JONES asked Dr. Phillips for information regarding the relative frequency of sterility in these cases of spurious hermaphroditism. It was a law of evolution that in hermaphrodites one set of organs was atrophied in proportion to the development of the other, and so in cases where enlargement of the clitoris and approximation to the male type obtained, it might be expected that an imperfect development of the uterus and ovaries would exist.

Dr. JOHN PHILLIPS said, in reply, that the two small tumours in the groin (well shown in the dissection) had materially complicated the diagnosis as to sex. He thought that specimens of spurious male or female hermaphroditism were not uncommon, but that four occurring as they did was unique; he was anxious

to observe the result of a future pregnancy. The father was certainly the elder of the two parents, but his exact age he could not remember. He was unfortunately unable to throw any light on Dr. Handfield-Jones's queries.

JULY 7TH, 1886.

JNO. B. POTTER, M.D., President, in the Chair.

Present—26 Fellows and 2 visitors.

Books were presented by Dr. Auvard, Dr. Henry F. Campbell, the Smithsonian Institution, and the Société Obstétricale et Gynécologique de Paris.

W. Reginald Tuckett, M.R.C.S. (Bath), was admitted a Fellow of the Society.

Tom Bates, L.R.C.P.Ed. (Worcester); W. Owen Jones, M.R.C.S. (Bowdon); Alfred Edmund Kennedy, L.R.C.P.Ed. (Plaistow); William Lauder, M.D.Ed. (Manchester); Herbert Smith Renshaw, M.D.St.And. (Sale); Fourness Simmons, M.B. (Egremont); Arthur Edwin Sutcliffe, M.R.C.S. (Manchester); and Arthur Thomas Winterbottom, L.R.C.P.Ed. (Swinton), were declared admitted.

The following gentlemen were elected Fellows of the Society :—Hunter Jackson Barrow, M.D.Ed.; Richard Broughton Bothamley, M.R.C.S. (Bromley, Kent); Arthur Bristowe Carpenter, M.A., M.B.Oxon. (Croydon); Charles William Chapman, L.R.C.P.Lond. (Shepherd's Bush); David Fennell, L.K.Q.C.P.I.; Herbert Alfred Hill Fenton, M.D.Brussels; Ernest Harding Freeland, L.R.C.P.Lond.; Ernest Carrick Freeman, L.R.C.P.Lond.; Henry Croker Garde, L.R.C.P.Ed. (Queensland); Henry Nelson Holberton, L.R.C.P.Lond. (East Molesey); Charles John Jacomb-

Hood, L.R C.P.; William McMullen, L.K.Q.C.P.I.; Shadforth Morton, M.D.Dur. (Croydon); Arthur Wesley Ogle, L.R.C.P.Lond.; Frederick Arthur Thomas O'Meara, L.R.C.P.; Thomas Alexander Papillon, L.R.C.P.Ed. (Oakham); Henry John Prangley, L.R.C.P.Lond. (Anerley); Thomas Arthur Richardson, M.R.C.S. (Croydon); Frank Rushworth, M.B.Lond.; Bernard Charles Scott, M.R.C.S. (Penge); Samuel Parsons Smith, L.K.Q.C.P. (Croydon); and George Stephen Ware, L.R.C.P.Lond.

The following gentlemen were proposed for election :— Robinson Bowstead, M.D. (Brighton); Frederick Bazley Fisher, L.R.C.P.Lond. (Dorchester); and Henry Louis Preston Hardy, M.R.C.S. (Kingston-on-Thames).

TUMOUR EXPELLED FROM THE UTERUS AFTER DELIVERY.

Dr. Daly exhibited a tumour which he had recently removed from the interior of the uterus by the écraseur. The lady was confined the end of April, the child and placenta being expelled before the patient was seen. There was no hæmorrhage, and the uterus firmly contracted. The patient was up and well in fourteen days. She objected to use antiseptic injections after labour, and as there was not, at any time, the least fœtor from the discharge, the point was not pressed. Five weeks after labour she again sought advice, complaining of the most horribly fœtid discharge from the vagina. On examination, a mass nearly the size of the hand, and feeling soft and fleshy, was found to be protruding through the os uteri. It was easily removed by the écraseur, and the patient was out and perfectly well in a week. The mass looked exactly like placental tissue, and the question was, whether it was an instance of placenta succenturiata, or a sloughing submucous fibroid.

Dr. W. S. A. Griffith stated that the specimen had the appearances and the history of a fibroid having undergone spontaneous enucleation.

Dr. Herman had had under his care four cases of the spontaneous disintegration and expulsion of uterine fibroids. One was a very large one and was protruding from the vulva when he saw it, and in it there was fœtor. In the others there was no fœtor when the patient first came under observation, although in one case, after the patient had been examined, the matters discharged became fœtid, doubtless from the access of putrefactive germs having been permitted in the examination. In one case the fibroid was found presenting at the os uteri some days after labour, as in Dr. Daly's case. In this case it was noteworthy that the placenta was prævia, a condition not common in first pregnancies, but frequent in pregnancy with fibroids.

Dr. Champneys said that the mass was probably a fibroid, at first intramural and afterwards intra-uterine. This would account for the absence of fœtor at first, and the occurrence was not very uncommon after labour. He had described a similar case in the 'St. Bartholomew's Hospital Reports' for 1877, the fibroid forming at the time of labour a large subperitoneal projection, but being afterwards expelled internally. He had found that the thirty-fifth day was a very common time for this expulsion to take place.

MALFORMATIONS OF THE FALLOPIAN TUBE.

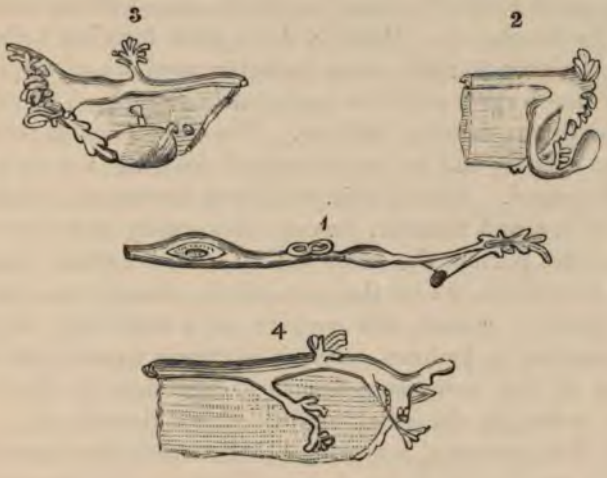
By Alban Doran.

These specimens represent every example, with one exception, of malformations of the Fallopian tube which I have discovered in the course of the examination of over 1000 uterine appendages since the year 1878. Five out of six cases were removed in the course of operations performed at the Samaritan Free Hospital. Thus, having noted 769 of these surgical proceedings, the percentage of the malformations in question only amounts to 0·65 per cent.

The first specimen (fig. 1) throws much light on the manner in which accessory ostia are formed. It was taken from a monstrous fœtus, the dissection of which I described in the 'Journal of Anatomy and Physiology,'

vol. xv, January, 1881. There was fissure of the abdominal walls and complete ectopia of the bladder. That organ consisted of two unsymmetrical portions, whilst the right and left halves of the genital tract departed still further from natural symmetry (loc. cit., pl. xix). Fig. 1 represents the right internal organs. They formed a curved tube nearly two inches in length. The inner portion was thick-walled and fusiform ; in the sketch it is laid open to display its walls and its cavity. It was, in fact, a monstrous uterus resembling one of the uteri of the true opossum (*Didelphys*), a monstrosity already noted in our species. Beyond the uterus was a flat, button-like projection over three tenths of an inch in diameter. It was perforated by two apertures completely separated by a thick septum. The more internal led into the canal of the half-uterus, which opened into one of the two portions into which the bladder was divided. The outer aperture passed into a canal which tunnelled the remainder of the tube for nearly half an inch. External to this point, the tube suddenly became impervious, ending in a thin cord with small but very distinct fimbriæ at its extremity. There was an opening in the midst of the fimbriæ which admitted a bristle almost as far as to the end of the thick part of the tube. Close below the fimbriæ, and hanging from behind the very short peritoneal fold which held the entire tube to the abdominal walls, was a minute atrophied ovary.

The fusiform inner portion of the entire tube representing the uterus, the remainder must be considered to stand for the Fallopian tube. The tube and uterus are developed from Müller's duct. This duct first appears as a groove in the germinal epithelium. The groove should close in evenly along that portion of the duct which becomes the Fallopian tube. Partial failure in the closure of the groove causes an accessory ostium. In this specimen, the closure has been so faulty that the continuity of the canal has been completely broken. Even should the button-like projection lie on what some may consider to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be uterus and not Fallopian tube, it must still have been developed by the same process.

There is another manner in which an accessory ostium may be developed. Müller's duct, after forming a closed tube, appears to split along its outer portion and acquires a communication with the peritoneal cavity.* The edges of the fissure develop fimbriæ. The extreme outer portion of the tube is said to remain closed, forming the hydatid of Morgagni. Should this secondary fissure, the origin of the ostium and fimbriæ, become abnormally closed across its middle portion the outer will become a normal fimbriated extremity, whilst the part of the fissure internal to the point of closure will remain as a secondary ostium, surrounded by fimbriæ. For it is clearly natural that the edges of the secondary fissure should develop fimbriæ, even under the abnormal conditions just described.

In this specimen, however, I believe that the abnormal orifices are due to faulty closure of the edges of the groove whence Müller's duct is developed, and not to perverted development of the secondary fissure in that duct. Hence we can understand why no fimbriæ surround the button-like projection, which lies in a position where fimbriæ are not naturally developed.

The next specimen, fig. 2 (Mus. Royal College of Surgeons, Path. Series, No. 4579), represents a highly

* This question of a secondary fissure appears to be still an embryological problem. It is, I believe, possible that the primitive Müllerian groove may naturally remain open at its uppermost part, where its edges may adhere to the peritoneum, which gives way within the area of this adhesion. Thus an ostium communicating with the peritoneal cavity would be accounted for, and the free edges would develop fimbriæ. According to an opposite view, the groove closes along the whole length of the Müllerian groove, and afterwards Müller's duct splits again at its uppermost part, acquiring a communication with the peritoneum, whilst the edges of the fissure develop fimbriæ. In respect to my own observations in this memoir, it is important to remember that there is a fissure in the outer part of the tube which acquires a communication with the peritoneal cavity and becomes surrounded by fimbriæ. Whether the fissure be primary or secondary, in the sense indicated above, is of secondary importance for the present purpose. I employ the term "secondary" above, in accordance with the more-widely accepted theory.

developed hydatid of Morgagni, bearing a fringe. The fimbriæ of the tube are short and thick. The above observations on the secondary fissure in Müller's duct may explain the development of this anomaly. The hydatid is large and its pedicle is stout and flattened; from its edge springs a small tuft of fimbriæ.

Waldeyer's theory of the development of the hydatid of Morgagni also throws light upon this specimen. He asserts that the outer part of Müller's duct, being held fast by structures above it, is dragged upon, and not sharing the process of secondary fissure just described, it remains as the pedunculated hydatid of Morgagni. Klob accounts for the variations of form observed in the fimbriated extremity of the tube by a theory that the secondary fissure may vary in its extent. It may reach completely to the blind extremity of the duct. In this case there would be no hydatid of Morgagni; on the other hand, if the secondary fissure does not extend so far outwards as possible, the hydatid will be large and will bear a long pedicle.

Fig. 3 represents a specimen taken from a dermoid ovarian cyst removed some years ago by Mr. Thornton (Museum Royal College of Surgeons, Path. Series, No. 4516). A small pedunculated bunch of fimbriæ springs from the upper surface of the tube, half an inch from the normal fimbriæ. The tube exhibits no other abnormality of any kind whatever. Two small pedunculated cysts spring from the broad ligament, and a large cyst, half an inch in diameter, lies on the site of the parovarium. The pedicle of the accessory fimbriæ is impervious. I examined, four years ago, a similar case, from a subject with ovarian cystic disease. In this instance the pedicle had atrophied, so that the fimbriæ appeared to lie loose in a fold of broad ligament.

Fig. 5 is a fine drawing, by Mr. Lewin, representing a tube with several interesting anomalies, from a case of oöphorectomy performed last spring by Dr. Bantock.

An inch from the fimbriated extremity is a wide acces-

sory ostium, surrounded by a very thick tuft of fimbriæ. This ostium freely communicates with the channel of the tube in both directions. Dr. W. S. A. Griffith has recently shown me a specimen where this condition existed. About a quarter of an inch external to this accessory ostium is a bunch of fimbriæ on a short impervious pedicle. A little further outwards is a hernial protrusion of the mucous membrane of the tube.

I believe that all the above malformations are due to partial closure of the secondary fissure. Hence arose the accessory ostium and the hernial protrusion, at least. The pedunculated fimbriæ were probably developed, in part, before the abnormal closure of the middle part of the fissure. Still, there is room for the opposite theory, that the primitive groove forming Müller's duct never closed in at the site of the accessory ostium. The margins of that groove do not, however, naturally tend to produce fimbriæ; those of the secondary fissure do produce them. That the hernial protrusion represents imperfect closure, primary or secondary, there can be little doubt. Some German authorities would attribute it to tubal inflammatory disease, possibly intra-uterine. I believe that this theory is very faulty. Inflammatory disease would close the tube and probably obliterate the fimbriæ. It could never produce a complicated over-development of those structures.*

In this specimen, the hydatid of Morgagni is converted into a small fimbria on a very long pedicle, a condition which I have frequently observed. There is also a large pyriform pedunculated cyst springing from the broad ligament close to the tube.

* Rokitansky ('Lehrbuch der Pathologischen Anatomie,' 3rd edition, 1861, vol. iii, p. 434) traces certain pedunculated accessory fimbriæ to the tubes of the Wolffian body. These fimbriæ spring from the surface of the broad ligament a little below the tube. The theory is ingenious, but exceedingly faulty. The pedunculated fringes are apparently outrunners from Müller's duct, from which they have become separated. They are generally, if not always, associated with other anomalies of the tubes, as in Merkel's interesting case (see Schröder, 'Die Krankheiten der Weiblichen Geschlechtsorgane,' 7th ed., 1886, fig. 146, and p. 349.)

Fig. 4 is from a specimen belonging to a case of cysto-sarcoma of the right ovary. The left ovary was converted into a cyst four inches in diameter, and this specimen was attached to it. The tube bears an accessory ostium with thick fringes, and a blind secondary tube bearing a fringe at its extremity and at one side, springs from the main tube inferiorly, a little internal to the accessory ostium. This remarkable accessory tube was probably developed through an eversion and prolongation of one of the edges of the primitive groove of Müller's duct. In this specimen the hydatid of Morgagni is represented, as in the last, by a bunch of fimbriæ on a long pedicle.

I will conclude these observations with some reference to the records of others.

The first systematic writer on the subject was M. A. Richard.* About the year 1850, in searching thirty female bodies he found accessory fimbriæ five times. He was more successful in his search than any subsequent observer. In two cases there were two accessory fimbriæ on one tube; in one of these cases the subject was a fœtus at term, in the other a girl aged fifteen. The remaining three cases were in adults. In all cases the fimbriæ lay at a distance of from two to three centimetres from the root of the normal fimbriæ. Lastly, Richard declared that all communicated by an opening with the canal of the tube and at the other extremity with the peritoneal cavity. M. Richard was certainly very fortunate in finding so many examples of the anomaly in its most perfect form in thirty subjects.

Rokitansky† published fresh researches on the subject a few years later, dwelling on the remarkable fimbriæ seen on the surface of the broad ligament, often at a perceptible distance from the tube. Klob noted the occasional presence of a dilatation of a segment of the

* "Pavillons multiples rencontrés sur des Trompes Utérines," 'Gazette Médicale de Paris,' 1851.

† "Ueber accessorische Tubarostien und ueber Tuberanhänge," 'Allgem. Wiener med. Zeitung,' 1859, 32.

calibre of the tube, a small bulging surface of the coats of the tube, somewhat thinned, near the root of the normal fimbriæ.

Winckel,* the most recent writer on the subject, has not enjoyed the good fortune which fell to M. Richard. He has only seen an abnormal orifice twice, notwithstanding the fact that he entrusted his house surgeon with the task of searching over a large series of tubes in order to note every anomaly that could be discovered.

Fleming† speaks of the pedunculated fimbriæ, especially when of the character seen in Fig. 4, as accessory tubes (*Nebeneileiter*). He has observed them three times in 100 female bodies, and traces them to outrunning processes which have been discovered on Müller's ducts in the embryo. I have already given my own opinion on their development.

Lastly, the possibility of the escape of an ovum through an accessory ostium so large as in Fig. 5 must not be overlooked. Winckel‡ has found the hydatid of Morgagni adherent to the back of the uterus. This complication would, he believes, favour abdominal pregnancy by interfering with the movements of the Fallopian tube. The pedunculated fimbriæ might produce the same condition after adhesion to the neighbouring structures.

MYXO-FIBROMA OF CERVIX UTERI IN A GIRL AGED SEVENTEEN.

Dr. Galabin showed a pedunculated growth removed from the cervix uteri of a girl aged seventeen. She had suffered from a vaginal discharge of blood, mixed with watery fluid, for about six weeks. When she coughed, a mass was extruded occasionally from the cervix.

* 'Lehrbuch der Frauenkrankheiten,' 1886, p. 569, and fig. 80.

† 'Die Krankheiten der Eileiter und die Tubenschwangerschaft,' 1876, p. 10.

‡ Loc. cit., p. 570.

She was then sent to Guy's Hospital. On examination a soft lobulated growth was felt, which bled easily on handling. In an older woman it might, at first sight, have been taken for a malignant cauliflower excrescence. It was removed by the galvanic écraseur. On section of the lobules, the naked-eye appearance resembled that of myxoma. They collapsed considerably, a clear sticky fluid exuding. No milky juice could be scraped from the surface. A microscopic section was shown, the appearance of which was mainly that of connective tissue, containing numerous nuclei, but in parts it approximated towards the character of myxoma.

RETROPERITONEAL CYST ASSOCIATED WITH SOLID MALIGNANT (?) INTRACYSTIC GROWTH.

Dr. Galabin showed a retroperitoneal cyst, associated with solid growth, which he had removed from a woman aged forty-nine, and the signs of which had closely resembled those of ovarian tumour. The patient had been sent to him by Dr. Roper, of Lewisham Hill, who made, in the first instance, what turned out to be a very acute diagnosis, namely, that the patient had cancer somewhere at the back of her abdomen. The illness commenced with symptoms resembling intestinal obstruction, vomiting, and abdominal pain. The patient became extremely emaciated, the skin remaining in a fold when pinched up, as is often the case with patients affected by cancer. Then signs of fluid in the abdomen appeared, and it was doubtful whether this was encysted or ascitic. Dr. Galabin found that the lower segment of a cyst could be detected in front of the cervix; the uterus appeared to be drawn up, and the sound showed its mobility in one direction to be impaired. The percussion signs were like those of ovarian cyst, but the abdomen was flat, as in cases of ascites. A diagnosis was made that the fluid was probably in a lax cyst. On making an exploratory

operation a large cyst was found, the front of it closely blended with omentum. The contained fluid was purulent. The cyst was not connected with the ovary, but sprang from the front of the lumbar vertebræ. In its interior were solid malignant-looking masses, the largest about the size of the fist, other smaller ones pedunculated. Extensive separation from intestine, and enucleation from the mesentery were necessary before anything like a pedicle could be obtained. The pedicle then consisted of a very hard fleshy base like that of a large fibroid tumour. After it had been dropped and thought secure, arterial bleeding occurred, and it was necessary to transfix it again, and to tie arteries separately. The operation lasted about two hours. The patient was doing well three weeks after the operation, and was gaining flesh, though still emaciated. A microscopic section of the growth was shown. It approximated to the character of a spindle-celled sarcoma. No milky juice could be scraped from the freshly-cut surface.

Dr. CHAMPNEYS asked whether the physical signs pointed to a post-peritoneal or intraperitoneal growth, *i. e.* behind or in front of the bowels.

Dr. GALABIN answered that the growth was in front of the intestines.

MYXO-CARCINOMA OF ABDOMINAL WALL AND OVARIES.

By W. S. A. GRIFFITH, M.B.

DR. W. GRIFFITH exhibited portions of two ovaries, having the closest resemblance to a cystic chorion. They were removed after death from a patient who died at the age of forty-eight, with cancer of the abdominal wall and hydroperitoneum. The ovaries were much enlarged, and exhibited the same cancerous structure as the tumour of the abdominal parietes; but the peculiar cystic appearance was due to secondary myxomatous degeneration.

A CASE OF CHRONIC ABSCESS OF THE FEMALE URETHRA.

By G. Ernest Herman, M.B.Lond., F.R.C.P.,
OBSTETRIC PHYSICIAN TO THE LONDON HOSPITAL.

The following account of the case is based upon notes taken by Mr. Horace Crane, clinical clerk.

H. W—, æt. 47. Admitted into the London Hospital September 16th, 1885. She began to menstruate at the age of eighteen, but was never regular, the interval varying from two to six weeks. The flow was scanty and attended with a good deal of pain. She was married at the age of twenty-seven, and had one child, eighteen years ago, which was born dead, after a bad labour, supposed to have been brought on by a fall downstairs. About seventeen years ago her husband gave her what she calls "the bad disease;" but she remembers no more about it than that it was attended with discharge, and pain in micturition. Excepting for this, she has had good health until the present illness.

This began three or four years ago, with pain on micturition, which lasted about a quarter of an hour afterwards, and was usually relieved by lying down. About two years ago slight pain on sexual intercourse began to be felt; for the last twelve months this pain has been severe, and for the last six months intercourse has been almost impossible. For the last twelve months micturition has been so frequent that her pain has been practically continuous. For twelve months before admission she has been attended by Dr. Major Greenwood.

Condition on admission.—On making a vaginal examination there was great tenderness. The vaginal orifice was obstructed by a convex, ill-defined, tense, brawny,

firm, tender swelling situated between the anterior vaginal wall and the urethra. There was no sign of disease in any other part of the body, except that the temperature was 100·2°, and that the patient was very deaf.

On the evening of admission the patient was unable to pass water, and it was drawn off by the catheter. On the following morning, when the catheter was passed, no urine escaped, but about a dessertspoonful of pus and blood. Patient said that she felt as if something had burst, and that on subsequently going to the water-closet some more matter came away. Temperature was normal.

During the next few days the pain on micturition continued, and the swelling and tenderness felt through the anterior wall of the vagina, though less than on admission, did not further diminish. The bladder was examined with the sound, but no evidence was obtained of calculus, or any other disease of the bladder. The urine contained a small quantity of pus.

September 25th.—The patient was anæsthetised. The swelling between the urethra and vagina was found to be smaller, softer, and of a somewhat boggy feeling, instead of being convex and tense, as on admission. The urethra was dilated with Hegar's dilators until the finger could be inserted. The finger in the urethra perceived an opening the size of a pea on the vaginal side of the canal. The margin of this opening was soft, so that with a little pressure the finger could be pushed through it, and entered a cavity about the size of half a walnut, with a ragged irregular wall, situated between the urethra and vagina. After withdrawal of the finger the handle of a scalpel was put in the urethra so as to protect the opposite wall, and then the interior of the cavity described was rubbed over with solid nitrate of silver. In the evening after this had been done the temperature rose to 100·4°. Next morning it was 99·8°, and in the evening normal. With the exceptions mentioned it was normal throughout the patient's stay in hospital.

October 2nd.—Patient now has much less pain. There

is still slight thickening around the urethra. Urine acid, free from albumen.

11th.—Discharged.

November 18th.—At my request, kindly conveyed to patient by Dr. Greenwood, she came to see me. She has now no pain, either on micturition or on sexual intercourse. No appreciable thickening along urethra. Micturition is still rather more frequent than patient would like, being about every hour or oftener.

January 20th, 1886.—Can now go longer without micturating—two hours or more. Thinks herself quite well. Nothing abnormal found on examination.

May, 1886.—Patient still thinks herself quite well.

This case is the only one of the kind that I have seen. I find in medical literature but few cases at all resembling it. On account of its rarity I have thought it worth bringing before this Society.

Two explanations may be given of the origin of the abscess in this case. One, that it was a result of chronic congestion of the urethra of the kind first described by Sir Charles Clarke.* The other that it was a suppurating cyst. The description given by Sir C. M. Clarke of the clinical character of congestion of the urethra well corresponds to the history given by my patient. He says the disease is ascertained sometimes by pain and difficulty in sexual intercourse. In many cases the constant uneasiness felt by the patient calls attention to it. Frequent desire to make water is one of the most troublesome symptoms. On examination, a bulbous tumour, painful on pressure, and formed by a thickening of the urinary passage, will be found situated behind the pubes.

I have seen cases presenting these signs and symptoms in a slight degree, but have not met with a well-marked one.

West,† speaking of this chronic congestion of the urethra, says, "In one instance I saw an attack of this

* 'Diseases of Females,' 3rd edition, 1831, p. 309 *et seq.*

† 'Diseases of Women,' edited by Duncan, p. 611.

kind issue in the occurrence of suppuration in the cellular tissue around the urethra, and on puncturing the abscess quite an ounce of pus escaped."

Skene* mentions "a case of peri-urethral inflammation in which an abscess formed in the urethro-vaginal septum and discharged into the urethra. A fistulous opening from the floor into the sac of the abscess remained. The urethra occupied its normal position and admitted the sound easily; and by introducing it with the point downwards it passed into the sac of the abscess, thus giving the physical signs of urethrocele; but the small size of the opening in the floor of the urethra, the marked infiltration and induration of the tissues, and the history of the case, led to a diagnosis." This case seems to be in all important respects one parallel with mine, and it is to be regretted that Skene gives no information as to its presumed cause, its course, or its treatment.

A case of *acute* abscess of the female urethra was communicated to this Society by Dr. F. C. Cory.† The urethra, he says, "felt like a great roll, filling the vagina completely. The meatus urinarius was so buried in the swollen parts as scarcely to be made out." The bladder was so irritable that no urine could be retained longer than a few minutes. On the fourth day from the commencement of the symptoms the abscess burst during a violent fit of retching, the opening being about half an inch in front of the meatus. A few days afterwards the patient was in her usual health. Dr. Cory could find no cause for the illness. His diagnosis was, abscess situated in the cellular tissue surrounding the urinary passage.

These are the only cases that I find on record of inflammation around the urethra going on to suppuration.

Cystic tumours suppurating and bursting into the urethra are also rare. Those who have published cases of the kind speak of a very small number of cases as

* 'Diseases of the Bladder and Urethra in Women,' 1878, p. 317.

† 'Obst. Trans.,' vol. xi, p. 65.

being their whole experience of the condition. Priestley* has described two cases of cysts bursting into the urethra. From one, fatty matter resembling beeswax was discharged (which suggests that it may have been a small dermoid cyst); from the other a mixture of urine and pus. Both were situated in the urethro-vaginal septum. No treatment other than palliative was permitted in either.

Lawson Tait† has published a case in which a sac as large as a hen's egg, which protruded from the vulva, opened into the lower wall of the urethra by an opening large enough to admit a No. 9 or 10 catheter. When this was pressed upon, fœtid ammoniacal pus was discharged from the urethra. The sac was lined with corrugated mucous membrane. The patient had had it for many years. It was cured by cutting away the lining membrane and closing the cavity by sutures.

Skene Keith has published‡ a case of thickening, and dilatation into a pouch, of the female urethra, discharging pus. Cases of cystic cavities opening into the urethra have been recorded by Foucher§ and Gillette,‖ but in these pus was not present. I have myself seen a case in which the urethra presented a saccular dilatation at two places, but there was no purulent discharge.

These cases, the only ones of the kind that I can find, suggest that the suppuration of a cyst may have been the pathological change in the case which forms the basis of this communication.

In the absence of a dissection of the parts it is impossible to be certain as to the precise nature of the morbid change. But I do not think it was a cyst, for the reasons, first, that the soft ragged friable wall of the cavity did not feel like the interior of a cyst, which one would expect

* 'British Medical Journal,' 1869, vol. i, p. 6.

† 'Lancet,' 1875, vol. ii, p. 625.

‡ 'Edinburgh Obstetrical Transactions,' vol. x, p. 151.

§ 'Winckel, 'Krankheiten der weiblichen Blase und Harnröhre' (Billroth und von Pitha; Frauenkrank.), S. 37.

‖ 'Lancet,' May 6, 1876.

to be either smooth, or else thickened and corrugated; and, second, that all signs of the cavity so quickly and completely disappeared after the pus was discharged, no surgical measure beyond the single superficial cauterization of its walls being used. It seems to me that the case may more properly be classed along with those described by Sir Charles Mansfield Clarke and Dr. West of chronic congestion of the urethra, sometimes leading to suppuration; this case being an example of that termination. It is a morbid change of which little is known, either as to its causes, course, terminations, or pathology. As it is only by the study and comparison of published cases that our knowledge of the rarer forms of disease can be advanced, I have put this one on record.

Dr. Daly said that in a case of congestion of the urethra in a female, which had resisted all treatment, the patient being for months confined to bed and suffering intense pain, he applied iodoform every day along the entire course of the urethra, and very soon cured the case by this treatment. The application was made by filling the groove of a director with iodoform, and when the director was well in the urethra reversing the direction of the groove. He had to thank Dr. Herman for the suggestion.

Dr. Gervis, though surprised at the statement in Dr. Herman's interesting paper as to the rarity of the condition he described, could certainly at the moment only recall one case. In this case the symptoms had been those of painful micturition, but without evidence of cystitis, and of pain, tenderness, and swelling referred to the vagina. On examination an abscess was found in the anterior vaginal wall in association with the urethra, and the same evening, probably as a result of the examination, which included the passage of a sound into the bladder, it burst into the urethra and the patient made a good recovery.

Mr. Alban Doran referred to an interesting case of a diverticulum in the female urethra described by Santesson, of Stockholm, and recorded in the 'London Medical Record,' March, 1885. The symptoms were very puzzling until the parts had been carefully explored.

Dr. Galabin had met with several cases in which a swelling, bulging at the vaginal outlet, was formed by a cavity in front of the urethra and communicating with it, containing more or less purulent fluid, and allowing the urine to collect in it and become decomposed. In one instance he had performed the same ope-

ration which Mr. Lawson Tait had performed in a case referred to by the author. He had opened the sac from the vagina, cut away redundant walls, and brought together the edges with sutures. Another case he had met with showed that one source of such a cavity might be a fault of development. After laying open the sac from the vagina, he found that there was no communication with the urethra, but only with a tube running up as far as the cervix uteri, beneath the urethra and bladder, and containing a watery, semi-purulent fluid, which had been escaping from a minute orifice in the sac. The walls between this passage and the vagina being cut away, it was found on making microscopic sections that the passage was lined with squamous epithelium, like that of the vagina, but thinner, and in a state of inflammation.

Dr. MATTHEWS DUNCAN had seen many abscesses in the recto-vaginal septum, but he remembered none in the urethro-vaginal septum. Chronic urethritis he had often seen, and also some cases of urethrocele.

Dr. W. GRIFFITH said it would be of interest to know the exact anatomical situation of these abscesses; it was certainly not the mass of loose cellular tissue which lies between the cervix and bladder—the seat of anterior parametritis—and below this part the urethra and vagina were so intimately blended and so dense in structure that it seemed hardly likely an abscess of such a size could form there.

Dr. M. HANDFIELD-JONES narrated a similar case which had come under his observation recently. The patient while in good health was taken rather suddenly with painful micturition and a burning pain in the privates. On examination a swelling the size of a small hazel-nut was felt per vaginam in the floor of the urethra; this gradually enlarged till it was the size of a walnut, then a little pus was discharged from the urethra, followed by abatement of the symptoms and gradual absorption of the swelling. The thickening in the floor of the urethra did not disappear entirely for two months. There was no cause that could be suggested as a reason for the onset of the disease. Though cases of cystic dilatation of the urethra were apparently not uncommon, these cases of urethral abscess seemed to be rare.

OBSERVATIONS ON THE UTERINE BRUIT.

By Francis Henry Champneys, M.A., M.B.Oxon., F.R.C.P.,
obstetric physician to st. george's hospital.

The main facts concerning the uterine bruit, souffle, or murmur have long been known, but their value has been very variously appraised, while for some of the most curious of them we have hitherto depended entirely on foreign sources. Considering that pregnant women are by no means scarce in England, this latter circumstance is perhaps hardly creditable, and I have thought it well to bring before the Society a series of observations on the uterine bruit, illustrating points, some of which have been already recorded in this country, others abroad only, while others are recorded, it is believed, for the first time.

The first series of observations was made for me by Dr. E. S. Tait, when house physician to the General Lying-in Hospital, York Road, Lambeth, and will be seen to refer to forty-six cases, almost continuous (as shown by the numbers).

The points it was desired to observe were:

1. The position of maximum intensity before labour.

2. The position of maximum intensity after expulsion of the placenta.

3. The presence of pulsating arteries felt by the vagina, and the effect produced on the uterine bruit by their compression.

The cases are here appended.

No. 251.—Bruit heard before delivery at 1½ in. below and to left of navel.

Five minutes after expulsion of placenta it was heard about 2 in. above and to outer side of left pubic spine.

No. 262.—Bruit heard before delivery about 4 in. to left of navel and 2 in. below its level.

An hour after expulsion of placenta it was heard about 1½ in. above and to the left of the left pubic spine.

No. 263.—Bruit heard, but situation not observed before delivery.

Not heard after expulsion of placenta.

An artery was felt before delivery beating in the posterior wall of the vagina, but pressure on it did not affect the bruit.

No. 264.—Bruit heard before delivery about 2 in. directly to left of navel.

Twenty minutes after expulsion of placenta it was heard a little above and to the left of left pubic spine.

No. 265.—Bruit heard before delivery about 2 in. to the left of navel and a little below its level. It was not affected before labour by pressure on an artery felt beating in the posterior wall of the vagina.

It was not heard after expulsion of the placenta.

No. 266.—The bruit was not audible either before or after delivery.

No. 267.—The bruit was not observed before, and was not audible after delivery.

No. 268.—Bruit heard before delivery about 4 in. above and to the left of the symphysis pubis.

It was not heard after the expulsion of the placenta.

No. 269.—Bruit heard before delivery about 4 in. above and to the left of the symphysis pubis, loud and rasping. Pressure on a pulsating artery in the posterior wall of the vagina near the cervix distinctly altered the quality of the bruit, rendering it sharper and of a higher pitch, though not diminishing its intensity. (This was confirmed by Mr. Wöhrnitz.)

It was not observed after expulsion of the placenta.

No. 270.—Bruit heard before delivery about 4½ in. to left of navel and 1 in. below its level. Pressure on an artery beating in the posterior wall of the vagina did not influence the bruit.

It was not heard after expulsion of the placenta.

No. 272.—Bruit heard before delivery about 4 in. above and external to the symphysis pubis, on the left side.

Not audible after expulsion of placenta.

No. 273.—No observation made before delivery.

Not audible after expulsion of placenta.

No. 274.—Bruit heard before delivery about 5½ in. above and external to the symphysis pubis, and 2 in. below the level of the navel, on the left side. Half an hour after expulsion of placenta it was heard 3 in. above and external to the symphysis pubis, and on a level 2½ in. above the symphysis.

No. 275.—Bruit heard before delivery 4½ in. above and to left of symphysis pubis.

Not audible after expulsion of placenta.

No. 276.—Bruit heard before delivery 3½ in. above and to the left of the symphysis pubis, and 1½ in. above Poupart's ligament.

Not audible after expulsion of placenta.

No. 277.—Bruit heard before delivery 4½ in. directly to left of navel, on its level.

Not audible after expulsion of placenta.

No. 279.—No bruit audible before or after expulsion of placenta.

No. 281.—Bruit heard before delivery about 3½ in. below and to left of navel, and 1 in. from middle line.

Not audible the morning after the expulsion of the placenta.

No. 282.—Bruit heard before delivery 4 in. to left of navel and 1 in. below its level.

Not audible after expulsion of placenta.

No. 283.—Bruit heard before delivery 5 in. to left of navel and 2½ in. below its level.

Not audible after expulsion of placenta.

No. 284.—Bruit heard before delivery 5 in. to left of the middle line and 5 in. below level of navel.

Not audible after expulsion of placenta.

Pressure on an artery beating in the posterior wall of the vagina before delivery did not affect the bruit.

No. 285.—Bruit heard before delivery 4 in. to left of middle line and 2 in. below level of navel.

Not audible after expulsion of the placenta.

No. 287.—A case of placenta prævia lateralis (left side).

On admission the bruit was loudest on the level of the navel and 5 in. to its left. The evening before delivery it was loudest over a diffused area above the inner half of the left Poupart's ligament.

It was not audible after the expulsion of the placenta.

No. 288.—Bruit heard before delivery 3 in. below the level of the navel and 3¼ in. to the left of the middle line.

It was not audible after the expulsion of the placenta.

No. 289.—No bruit could be heard either before or after delivery.

No. 290.—No bruit could be heard either before or after delivery.

No. 291.—No observation was made before delivery.

No bruit was audible after the expulsion of the placenta.

No. 296.—Bruit heard before delivery 5½ in. above and to the left of the symphysis pubis, 4 in. below the level of the navel, and 5 in. to the left of the middle line.

It was inaudible after expulsion of the placenta.

No. 297.—Bruit heard before delivery *above* and to the *right* of the navel.

It was not audible after the expulsion of the placenta.

No. 298.—Bruit inaudible before and after delivery.

No. 299.—Bruit heard before delivery 5½ in. above and to the left of the symphysis pubis, 2½ in. below the level of the navel, and 5½ in. to the left of the middle line.

It was not searched for immediately after the expulsion of the placenta. Next morning it was inaudible.

No. 300.—Bruit heard before delivery 2¼ in. below the level of the navel and 3½ in. to the left of the middle line.

It was inaudible after the expulsion of the placenta.

No. 301.—Bruit heard before delivery very faintly to the left of and below the navel.

It was inaudible after the expulsion of the placenta.

No. 302.—Bruit heard before delivery, extending in a horizontal line, 9 in. long, from the navel.

After expulsion of the placenta it was heard nearly vertically above the symphysis pubis, *i. e.* 3½ in. from it upwards and to the left, 3 in. below the level of the navel, and 1½ in. to the left of the middle line.

No. 304.—Bruit heard before delivery 2 in. below the level of the navel, and 4 in. to the left of the middle line.

No observation was made after delivery.

No. 305.—Bruit heard before labour 1½ in. below the level of the navel, and 4½ in. to the left of the middle line.

Half an hour after the expulsion of the placenta it was heard 2½ in. above and to the left of the symphysis pubis, 3½ in. below the level of the navel, and 1½ in. to the left of the middle line. During observation it became inaudible.

No. 306.—Bruit heard before labour over a line nearly corresponding with the left side of the uterus over a length of 6½ in.

No observation was made after delivery.

No. 308.—Bruit heard before labour 2 in. below the level of the navel, 4½ in. to the left of the middle line, and 4½ in. above and to the left of the symphysis pubis.

It was inaudible after the expulsion of the placenta.

No. 309.—Bruit heard before delivery 6½ in. to left of middle line, and 1½ in. below level of navel.

After the expulsion of the placenta it was inaudible.

No. 312.—Bruit indistinctly heard before delivery near the navel, below and to the left.

No observation was made after the expulsion of the placenta.

No. 313.—No bruit audible before or after delivery.

No. 314.—Bruit heard before delivery 3 in. above and

to left of symphysis pubis, and 1 in. above Poupart's ligament.

It was inaudible after the expulsion of the placenta.

No. 315.—Bruit heard before delivery 4 in. to left of middle line, and 3½ in. below level of navel.

No observation was made after the expulsion of the placenta.

Nos. 316 and 317.—No bruit audible before or after delivery.

No. 320.—Bruit heard before delivery 4 in. to left of middle line, 4½ in. below level of navel, and 4 in. above and to left of symphysis pubis.

It was inaudible after the expulsion of the placenta.

Summary of Cases.

Total number of cases observed with regard to bruit = 46.

Before delivery.

Not audible before or after	=	8
Not observed before	=	3
Heard, but situation not noted	=	1
Heard on left side	=	33
Heard on right side	=	1
		46

After expulsion of placenta.

Not audible before or after	=	8
Not observed after	=	6
Heard before, but not after	=	27
Heard after*	=	5
		46

* In all cases the point of greatest intensity sank downwards after delivery.

Pulsating vaginal arteries felt = 5.

Pressure on artery affected bruit	= 1
Pressure on artery did not affect bruit	= 4
	5

Remarks.

The preponderance of the left-sided over right-sided bruits is very marked, and confirms the view that the bruit is produced in the arteries as they reach the uterus or soon after, the left cornu of the uterus being anterior to the right (dextral torsion).

It will be seen that the bruit was usually inaudible after the expulsion of the placenta, but in all cases in which it was not inaudible it sank downwards and generally inwards, thus again confirming the accepted theory.

In five cases pulsating arteries were felt per vaginam, but in only one of these did pressure on the artery modify the uterine bruit. With regard to this phenomenon (first observed by Rapin and Rotter), it by no means follows that the artery in question was the artery supplying the spot where the bruit was loudest, but only that it was connected with that artery; the change in pressure produced by compressing it might quite conceivably modify the bruit thus.

In one case of placenta prævia (No. 287) the bruit was heard on admission on the level of the navel and 5 in. to its left. The evening before delivery it was loudest over a diffused area above the inner half of the left Poupart's ligament. The placenta was on the left side. It would be too much to assert that the position of the placenta can have no possible influence on the bruit, but it is certainly true that our knowledge of the situation of the placenta (almost equally often on the front and back walls, very rarely (5 per cent.) on the side walls, and oftener on the right than on the left side), compared with

our knowledge of the situation of the bruit, proves that this connection, if it exists, is quite untrustworthy, and, indeed, practically worthless.

I have not been able to see Oscar Rapin's paper, which appeared in the 'Correspondenz-Blatt für Schweizer Aerzte,' Jahrgang ii, No 2; but, as quoted by Rotter, he made eight observations and felt vibrations in various arteries of the cervix "which entirely corresponded with the uterine bruits heard by the stethoscope on the abdomen of the patient in question, the compression of the vibrating artery by the examining finger stopping the uterine bruit as heard externally."

Rotter's paper is to be found in the 'Arch. f. Gyn.,' Band v, 1873, S. 539, "Ueber fühlbares Uteringeräusch." He first noticed the "palpable uterine bruit" in Schroeder's 'Klinik' in 1872, the patient being a 2-para in the middle of the tenth month of pregnancy. Round the navel, in an area 4—5 cm. in diameter (2 inches), a distinct whirring ("Schwirren"), like that in a superficial aneurysm or a weak faradic current was felt. It was synchronous with the mother's pulse. Strong pressure stopped it, and arterial pulsation could then be plainly felt. Over this area a loud uterine bruit was heard. On laying the patient on the side the bruit moved with the uterus. (Case A.)

The following is a brief analysis of Rotter's cases:

1.—Vibration felt round navel; moveable with uterus.

2.—Uterine bruit heard on the margins of the uterus. Not felt. On firm bimanual (external) palpation, vibration was felt in the right side of the hypogastrium. On relaxing pressure the vibration changed into arterial pulsation and then could not be felt. Per vaginam strong vibration was felt in the left vault of the vagina. In the right vault of the vagina a weaker vibration was felt, which could be traced down into a pulsating artery.

3.—Vibration felt continuous with pulsation on the portio vaginalis.

4.—A vibrating area felt parallel with the left Poupart's ligament.

5.—Uterine bruit very faintly heard, not felt.

6.—The same.

7.—Bruit heard to left of navel, not felt.

8.—Bruit plainly heard over a large area, not felt.

9.—Vibrating arteries felt per vaginam; loud bruit in abdomen, *which ceased on compression of the arteries felt per vaginam.*

10.—Bruit heard loudly on left side, and vibration felt in the same area.

11.—Loud bruit heard, not felt.

12.—Nothing heard or felt.

12 *a*.—Bruit heard but not felt.

13.—Bruit heard, and vibration felt parallel with right Poupart's ligament.

14.—Nothing heard or felt.

15.—Bruit faintly heard, not felt.

16.—Bruit heard, not felt. Compression of an artery felt pulsating per vaginam produced no effect on bruit.

17.—The same.

18.—Bruit heard, not felt.

19.—Loud bruit heard. Per vaginam vibration felt continuous with a pulsating artery.

20.—Vibration felt and bruit heard parallel with right Poupart's ligament.

21.—Bruit heard, not felt.

22.—Nothing heard or felt.

Rotter remarks: "We had thus in twenty-two investigations of twenty persons *felt* the uterine bruit eleven times internally or externally."

This remark is illogical; the vibrations felt per vaginam were not auscultated, and therefore cannot be said to have been accompanied by the bruit, though they may have been. The valuable part of Rotter's observations consists in the observation of a phenomenon *by two or more senses.*

Rotter warns us against the vibrations of the epigastric

artery as a source of error. These may be eliminated by (*a*) changing the position of the patient, therefore of the uterus, and therefore of the bruit; (*b*) observing the course of the epigastric artery, the area of the bruit generally runs more or less horizontally, and therefore across the line of the epigastric artery.

With reference to the first of these remarks I may say that I have found it impossible to convince myself of the change of position of the bruit, probably because the pregnant uterus near full time is too large to admit of much locomotion within the abdomen.

I have made the following analysis of Rotter's cases :

1.—Bruit heard and felt (A, 10, 13, 20) = 4.

2.—Heard but not felt (2, 5, 6, 7, 8, 11, 12 *a*, 15, 16, 17, 18, 19, 21) = 13.

3.—Vibration felt per vaginam (2, 3, 9) = 3.

4.—Vibration felt per vaginam and followed into pulsation (2, 3, 19) = 3.

5.—Vibration produced by pressure on the pulsating artery (2) = 1.

6.—Bruit stopped by compression of artery felt pulsating per vaginam (9) = 1.

7.—Nothing heard or felt (12, 14, 22) = 3.

Spiegelberg ('Geburtshülfe,' I Aufl., 1878, S. 103) summarises our present knowledge, and quotes Rotter's observations.

Schroeder ('Geburtshülfe,' Aufl., 1874, S. 83) compares the uterine to the umbilical bruit, a comparison which seems good at first sight, but seems to me faulty on further consideration. The umbilical bruit is *one* bruit, the uterine bruit (in its typical form) is a *multiple* bruit composed of many bruits of various pitch. This remark I cannot find, and yet this seems to me a marked characteristic of the uterine bruit. In cases where the murmur is *musical* it is not uncommon to hear several musical notes at once, whose intensity would seem to forbid the idea that they are harmonics of a single vibrating body.

With regard to Rotter's observations Schroeder says :—

"According to Rotter, the vibrations of the arteries which are heard as the uterine bruit can often (in half the cases hitherto examined) be felt as vibrations of the wall of the vessel, either internally or externally." Schroeder thus accepts Rotter's numbers without question, but, as I have above shown, the identity of bruit and friction can only be accepted for those cases in which *both* were observed over the same spot.

Two cases are here appended in which the uterine bruit was palpable in pregnancy.

Pregnancy; palpable uterine bruit.—Ann W—, æt. 30, 4-para. Is now pregnant seven or eight months. (St. George's Hospital, March 30th, 1882, C. 140.)

Per hypogastrium, uterine bruit unusually loud, diffused over both sides, particularly to left of navel. Within an area bounded above by a line joining both ant. sup. spines, below by Poupart's ligament (nearly), and to the right by a line 1 in. to left of linea alba, can be felt distinct friction synchronous with the patient's pulse. The point of greatest intensity is plainly to the left of the line of the epigastric artery. An artery can be felt deep down in a line joining the left ant. sup. spine with the navel (? left ovarian).

The friction described above varies much in intensity, and is more plainly felt on deep pressure. The region of greatest intensity of the bruit is also that of greatest distinctness of friction felt. Over the area of the artery described above the usual arterial sound is heard, which differs from the bruit in being less harsh and not multiple.

Pregnancy; palpable uterine bruit.—Margaret H—, æt. 39, 4-para. Is pregnant about seven months. (St. George's Hospital, July 10th, 1882, D. 60.)

Per hypogastrium, uterus can be felt reaching to within 3 in. of the base of the ensiform cartilage, and about 6 in. above the navel. Its shape is somewhat irregular. Head of fœtus plainly felt below the right hypochondrium.

Maximum intensity of heart-sounds 2½ in. above and to the right of the navel (breech presentation).

Uterine bruit plainly heard over an area bounded internally by a line extending perpendicularly 3 in. to the left of the navel, and reaching from 2½ in. above the level of the navel down to Poupart's ligament. From the upper limit of this line the upper boundary passes to the left and downwards, in a line convex upwards, to the left anterior superior spine. Within the whole of this area the uterine bruit is heard; all of the area is external to the line of the epigastric artery. Over nearly the left half of this area (which is also the place of greatest intensity of the sound) distinct friction can be felt.

On turning the patient on the right side the bruit is still felt on deeper palpation, but no proof can be established of change of position of the area of audible or palpable bruit.

Per vaginam, no uterine artery to be felt; cervix to the left.

The following case is (so far as I know) the first in which a palpable uterine bruit has been recorded in a fibrous tumour of the uterus.

Uterine fibrous tumour; palpable uterine bruit.—Lydia S—, æt. 41, married three years, three children, last child 2¾ years ago, no miscarriages. (Samaritan Hosp., Nov. 9th, 1877, No. 425.)

Complains of a lump in the abdomen seven years and flooding one year.

Catamenia began at sixteen years of age; irregular for the first year; very scanty till marriage; after marriage the duration of the periods was three or four days.

At the age of thirty-three the periods recurred every three weeks, lasted seven days, and were more profuse.

In July, 1876, after a menstrual period she began to flood, losing blood altogether three weeks. Since that time the periods have been less profuse and the intervals one month. The duration of the periods is now four days.

Seven years ago (æt. 34) patient noticed a lump in her abdomen about the navel.

In the last pregnancy and lying-in about three years ago (which were natural), she noticed that she was very large. The lump has grown rapidly since then.

At present she suffers inconvenience but no pain.

Abdomen distended above the level of the navel by a tumour the size of a man's head; hard, dull, not fluctuating, somewhat irregular on the surface, but generally round; freely moveable from side to side; can be raised somewhat, but not much.

In the right groin, over some 2 in. square, a friction is felt, pulsating with the patient's pulse and multiple, corresponding with the uterine bruit heard over the same area.

Per vaginam, cervix high up, not very hard, os patulous, admitting the first joint of the index finger; moves with the abdominal swelling.

Sound 8¼ in., concavity forwards, not freely moveable within the cavity, but moving *en masse* with the uterus.

The suggestion that a uterine bruit may arise in *veins* has long ago been made, but hitherto no case bearing on the question has been published.

The following case seems to supply the deficiency:

Uterine fibrous tumour; uterine bruit heard over the area occupied by venous sinuses.—Emma C—, æt. 22, single. (St. George's Hospital, Wright's Ward, admitted July 30th, 1882, died August 17th, 1882.)

Two months' pain in abdomen and sacrum. Abdomen "always large and hard," but for "last week or two" much larger, and indeed "as big again."

Menses began æt. 17, regular till eight weeks ago; the next period lasted only three days; the last period before admission was marked by very severe flooding lasting fourteen days, with clots, continuing to the time of admission.

Extreme pallor, pigmentation of palms of hands and soles of feet, varying much, the colour being sometimes actually yellowish brown. Faint systolic bruit heard all over cardiac area.

Abdomen much distended by a globular tumour, tolerably uniform and hard, reaching to within 3 in. of ensiform cartilage.

Uterine bruit very distinctly heard in both groins and thence across the lower part of the front of the tumour. It cannot be felt.

The patient died of hæmorrhage.

Autopsy (sixteen hours after death).—All the organs were bloodless. Uterus much enlarged by a large fibrous tumour. On the upper and posterior surface on the left side a small fibroid the size of an egg is seen. The vessels of the tumour were injected with plaster of Paris through a large vein in the broad ligament on each side. In the front of the tumour an arch was formed by large veins from each side, exactly corresponding to the position of the bruit during life. No special arrangement of arteries could be seen. When the uterus was dissected, no opening of any vessel could be seen, nor did any of the injection escape. At the os uteri internum, there was a plexus of very small vessels in the mucous membrane still retaining their red colour.

Microscopical examination showed the tumour to be a fibromyoma. (From P.M. and Case Book, 1882, No. 254.)

It need only be added that friction is often felt in the veins of the neck in anæmic women, and that the vibrations can be also appreciated as a venous hum. Both can be stopped by pressure on the vein above.

Dr. Gervis would like to ask Dr. Champneys why, precisely, he adopted the term "palpable bruit" to express the perception of a localised pulsation; and also whether, in the course of his observations, he had found corroborative evidence of Dr. Hicks's suggestions as to the effect of the uterine contractions on the characters of the souffle.

Dr. Herman thought the variations in loudness of the

murmur to which Dr. Gervis had referred were of much importance in its identification. There was no kind of abdominal enlargement in which a murmur having rhythmical variations in loudness was heard, excepting that produced by uterine tumours. The presence of such a murmur showed that a tumour was uterine, but did not give any further information as to its nature. The murmur might be as a rule louder, and the variations more marked in pregnancy than over a uterine fibroid; but he had heard murmurs over fibroids louder than those audible in some cases of pregnancy in which the uterus was enlarged to the same extent, and therefore he did not think the murmur was to be relied upon in the diagnosis between pregnancy and fibroids.

Dr. JOHN PHILLIPS asked if Dr. Champneys had had any experience in vaginal stethoscopy, and if so, whether it was corroborative of the hypogastric signs.

Dr. GALABIN asked if the author attributed importance to the quality of the blood as a cause of the uterine bruit. He thought himself that it had much to do with it, and accounted for its great variations in different persons. The natural change in pregnancy would probably render a bruit more easily produced, still more would pathological anæmia. He had found bruits more often heard in fibroid tumours when the patients suffered much from hæmorrhage. He had found a few instances in which, in pregnancy, a bruit was produced so easily that the bruit heard was dicrotic, that is to say, the dicrotic wave as well as the primary wave of the pulse had force enough to produce a bruit. In all these cases there was very marked anæmia. He would go rather further than Dr. Herman in drawing an inference from the changes in the bruit produced by uterine contraction. Doubtless there might be enough contraction in a fibroid tumour to alter somewhat the quality of the bruit. But, as Dr. Hicks argued, in opposition to Dr. Matthews Duncan, that the tangible changes due to contraction in a pregnant uterus could be distinguished from those in a fibroid tumour as being more marked, so he held, as to changes in the bruit. If the contractions first elevated in a very marked way the pitch of the bruit, and then, when at its height, almost extinguished a bruit, which before was loud, he thought that there was a very strong presumption in favour of pregnancy, as opposed to fibroid tumour.

Dr. M. HANDFIELD-JONES remarked that in some of the observations reported the uterine souffle was said to have been absent, and asked how often auscultation had been practised on the patients. Not infrequently the souffle was absent for considerable intervals and could only be detected by repeated and careful examinations. Observations of Dr. Andreiew went to show that under sufficiently searching auscultation the uterine

souffle could always be detected both before and after labour. For some time after expression of the placenta the souffle was usually absent, and this fact seemed confirmatory of the opinion that the character and intensity of the souffle was modified greatly by uterine contractions; the probability of hearing the sound post-partum seemed to vary inversely with the degree of uterine retraction. Dr. Handfield-Jones asked if Dr. Champneys could account for the fact that the uterine souffle was usually heard on the left side, also whether he thought the souffle was always multiple.

Dr. AMAND ROUTH asked how long the uterine souffle persisted, first after labour, second after the death of the fœtus *in utero*. He had seen a case at Charing Cross Hospital where labour had to be induced for incontrollable vomiting, in which vaginal stethoscopy proved the souffle to exist two or three weeks after the presumed death of the fœtus, which was mummified, the souffle being inaudible over the abdomen. He had frequently heard the souffle per vaginam over the cervix uteri, when inaudible over the abdomen; and, so far as his experience went, he had found that whenever the souffle of a pregnant uterus was audible over an abdominal area, it was also audible over the cervix uteri per vaginam. In one case of a souffle being heard in the abdomen over the site of a uterine fibroid, it was not audible over the cervix uteri. If this distinction between the area of diffusion of the souffle of pregnancy and that of uterine tumour be trustworthy, it would serve as a material aid in differential diagnosis.

Dr. W. S. A. GRIFFITH thought that the dextrotorsion of the uterus, which only occurs to a very limited extent, was by itself insufficient to explain the frequent absence of the uterine souffle on the right side; some other explanation was wanted which would apply equally to the cases in which it was absent on both sides. The great cause of the bruit was almost certainly the passage of blood suddenly from a small into a larger channel at the junction of the uterine arteries and sinuses.

Dr. CHAMPNEYS replied to many of the questions that the subject was so large that he had not attempted a complete study of it. In this sense his observations were confessedly imperfect. To Dr. Gervis, he replied, that by a "a palpable uterine bruit" (an expression used by Rotter) he meant a bruit which was also palpable as a thrill; the expression was obviously paradoxical, but he thought it was the shortest way of expressing the facts. With Dr. Galabin he was inclined to agree that marked rising in pitch was characteristic of the souffle in the pregnant uterus rather than the fibroid uterus. To Dr. John Phillips and to Dr. A. Routh, he said that he had not used the vaginal stethoscope, as the gain by such an instrument was very questionable, while the objections to its use were

obvious. He had never observed dicrotism in the souffle, but should look out for it in the future. He could not be certain whether the murmur heard in the fibroid uterus, and proved by autopsy to have been produced in the veins, was continuous or not. The case was only temporarily under his care; had he known what he should find he would have made more minute notes at the time. Dr Handfield-Jones asked whether he thought the souffle was always *multiple*. He thought the typical souffle was. It was often musical, and the strength of the various notes (which sometimes formed a sort of chord) pointed to their being produced by many vibrating bodies rather than to their being harmonics on a fundamental, produced by one vibrating body. The same was true when the sounds were not musical. As to the exact length of time the souffle was audible after delivery, the number of times auscultation was practised, &c., he could not make an answer without referring to his hospital notes. In answer to Dr. Handfield-Jones, he said that he believed that the cause of the greater frequency of the souffle on the left side was the dextral rotation of the uterus, by which the left cornu of the uterus came to lie nearer the anterior wall of the abdomen than the right cornu; it was along the sides of the uterus that the large vessels ran to the uterus. Dr. W. Griffith says that "the cause of the souffle is the entrance of blood into a large cavity." That is probably the chief cause, but the difficulty in assigning a cause is that there are many other sufficient causes, such as the sudden curves in the arteries, the quality of the blood, &c. To eliminate these is difficult.

OCTOBER 6TH, 1886.

J. B. POTTER, M.D., President, in the Chair.

Present—46 Fellows and 7 visitors.

Books were presented by Dr. Bossi, Dr. Edwards, Dr. Pinard, the Royal Medical and Chirurgical Society, the Medical Society of London, the College of Physicians of Philadelphia, the Council of University College, Guy's Hospital Staff, and the Middlesex Hospital Staff.

David Fennell, L.K.Q.C.P.; Herbert A. H. Fenton, M.D.; Ernest H. Freeland, L.R.C.P.Lond.; G. Carrick Freeman, L.R.C.P.Lond.; Charles J. Jacomb-Hood, L.R.C.P.; Frederick A. T. O'Meara, L.R.C.P.; and George S. Ware, L.R.C.P.Lond., were admitted Fellows of the Society.

Hunter J. Barron, M.D. (Finchley); Arthur B. Carpenter, M.A., M.B.Oxon. (Croydon); Charles W. Chapman, L.R.C.P.Lond. (Shepherd's Bush); Archibald Donald, M.A., M.B.Edin. (Manchester); Henry H. Holberton, L.R.C.P.Lond. (East Molesey); Arthur A. Jamieson, M.D.Glas. (St. Helens); Shadforth Morton, M.D.Dur. (Croydon); and Thomas A. Papillon, L.R.C.P. (Oakham), were declared admitted.

The following gentlemen were elected Fellows of the Society:—Robinson Boustead, M.D. (Brighton); Frederick Bazley Fisher, L.R.C.P. Lond. (Dorchester); and Henry Louis Preston Hardy, M.R.C.S. (Kingston-on-Thames).

The following gentlemen were proposed for election:—William Percy Ashe, L.R.C.P.Lond (Chislehurst); A. H. Freeland Barbour, M.D.Ed. (Edinburgh); Ambrose Edward Lea Charpentier, M.B.Dur. (Uxbridge); Lansdown Murray Guilding, M.A., M.B.Oxon. (Reading); Horace Hartley, L.R.C.P.Ed.; Sidney Fred. Harvey, L.R.C.P.Lond.; Charles Hoar, M.B.Aber. (Hurst Green); Herbert Chamney Hodges, L.R.C.P.Lond. (Watton); William George Holloway, B.A., M.B.Cantab.; John Stuart Hutton, L.R.C.P.Lond.; Frank Bingley Pullin, L.R.C.P. (Peel); Arthur Cresswell Rich, M.D. Lond. (Liverpool); Arthur Dumville Roe, B.A., M.B.Cantab. (Wandsworth); Robert Sanderson, M.B.Oxon. (Brighton); Edward Stewart, M.D.Brussels; William Woolmington Webber, L.R.C.P.Ed. (Crewkerne); George Fred. Welsford, B.A., M.B.Cantab. (Woodstock); Charles J. West, L.R.C.P. Lond. (Streatham); Robert Wharry, M.D.Aber.; and Walter Essex Wynter, F.R.C.S. (Twickenham).

MICROSCOPIC SECTIONS OF UTERUS REMOVED FOR CANCER.

By Arthur Lewers M.D.Lond.,

ASSISTANT OBSTETRIC PHYSICIAN TO THE LONDON HOSPITAL.

Dr. Lewers showed sections of the uterus he extirpated in March last for malignant disease of the body.

Professor Victor Horsley had kindly examined them and reported that the malignant growth was carcinomatous. He also examined a section of the nodule in the cervix of the same uterus, and reported that it was an ordinary fibroid.

It may be remembered that when the uterus was shown at the meeting of the Society in March, some of those present considered that the presence of this nodule in the cervix should have contra-indicated the operation.

Dr. Lewers had seen the patient and examined her on October 5th, seven months after the operation, and was glad to say that so far there was no return of the disease.

A gratifying feature in the case was the complete relief afforded by the operation from the severe pain the patient had previously suffered from.

FŒTUS FROM A RUPTURED TUBAL GESTATION.

By Arthur Lewers, M.D.Lond.

The fœtus was removed twelve days after rupture of the tube had taken place, by incision into the retro-uterine hæmatocele so formed immediately behind the cervix.

The following is an abstract of the case :

P. R—, æt. 27, married eight years, two children, the last four years ago, no miscarriages, was admitted to the London Hospital on April 17th, 1886, complaining of pain in the right iliac and lumbar regions, also in the hypogastrium.

History.—Patient was last poorly on March 28th, 1886 ; the period lasted seven days, and she passed a clot one and three quarter inches long. Before this she had seen nothing for two months. She had had dull aching pain in the lower part of the abdomen on and off like that which she had three years ago. The pain was somewhat relieved on March 28th, when the period began.

It seems that the pain referred to first came on three years ago when she was suckling her second child, which she did for twelve months. She thinks it was caused by catching cold just before she expected to be unwell. The period did not come on, and she saw nothing for six or seven weeks ; then she became poorly and passed a clot exactly like the one she passed recently in March last.

Catamenia first appeared when she was thirteen, occurred

regularly every four weeks, lasting three to four days, and were unattended by any pain till three years ago. Since then she has had pain for two or three days before each period, relieved by the flow.

Since marriage has menstruated every three weeks, and has lost much more than before.

State on admission (April 17th, 1886).—Uterus movable, but less so than normal; an elastic swelling the size of a large egg, somewhat fixed, is felt occupying the right posterior quarter of the pelvis. Sound passed three inches. Cervix torn bilaterally; there is a granular erosion or eversion round the external os. Temperature 100°.

From April 17th to April 24th temperature normal.

April 24th.—Temperature rose to 101°. Patient was nearly doubled up with severe pain in the lower part of the abdomen. Twelve leeches were applied to the hypogastrium, after which the pain was relieved considerably. No marked collapse.

26th.—Patient began to lose blood from the vagina. Still some pain at short intervals in the same place as before.

May 3rd.—Since April 24th the temperature has gone up at night to 100° or 101°, falling to normal in the morning.

Vaginal examination.—The uterus is very low down and pushed close behind the pubes. A tumour is now felt behind the uterus, bulging down the posterior vaginal wall, and extending laterally right across the pelvis.

May 6th.—Temperature at night has been high since the last note. It was thought that suppuration was taking place. An incision an inch across was made into the tumour through the posterior vaginal wall close to the cervix. Some dark blackish fluid and chocolate-coloured clot escaped from the opening.

May 10th.—The finger was passed cautiously into the cavity to see if any loose pieces of clot were present. What was thought to be a large piece of loose clot was

hooked out, but on subsequent examination it was seen to be a fœtus, the specimen shown.

Great difficulty was experienced in keeping the cavity sweet in spite of frequent irrigation with carbolic acid lotion (1—40) and the introduction of iodoform into it; and on May 16th, the temperature having been 104° for the preceding two nights, an attempt was made under ether to remove any portions of the decomposing clot that seemed ready for removal. While doing this a very sharp attack of hæmorrhage from the cavity of the hæmatocele occurred; it was only controlled by plugging the cavity with gauze. The gauze was removed two days after.

Subsequently the patient did very well and left the hospital in the second week of July. A shallow depression in the posterior fornix with rather sharp edges remains to indicate the position of the incision. There is a little thickening round it. The uterus is freely movable.

BLIGHTED OVUM.

Dr. John Phillips showed a blighted ovum.

INCOMPLETE PERICARDIAL SAC; ESCAPE OF HEART INTO LEFT PLEURAL CAVITY.

By Robert Boxall, M.D.

Dr. Boxall showed the chest organs of a woman, æt. 28, who died on the third day after the birth of her third child, with symptoms simulating pulmonary thrombosis. The autopsy, however, showed a congenital defect in the pericardial sac on the left side. Through this opening the heart had escaped, and was found lying in the left pleural cavity in immediate contact with the lung. The upper surface of the diaphragm in the neighbourhood of the heart's apex was coated with recent lymph. Behind

the heart was found a sickle-shaped fold, attached to the diaphragm below and extending upwards as far as the entrance of the vena cava inferior into the right auricle. The above-mentioned fold formed a pouch three quarters of an inch deep, from which the apex of the heart had escaped. This accident was followed by urgent dyspnœa and collapse. A distinct systolic murmur was audible over the whole cardiac area. The patient died thirty hours after the accident had occurred.

Dr. CHAMPNEYS said that out of the many points of interest in this valuable specimen, and the short history given with it, he wished to call attention to one. The patient had the symptoms usually associated with pulmonary thrombosis, but none was present. There was a systolic murmur heard all over the præcordia. This murmur reminded him of the valuable observations made by Dr. Angel Money at the General Lying-in Hospital, and recorded by him in the 'Med.-Chir. Trans.' (vol. lxv, 1882, p. 87). Murmurs were found by him in about 75 per cent. of 111 lying-in women observed consecutively. The murmurs were generally transient, and among the possible causes for some of them (not to enter into particulars) was the rearrangement of the thoracic viscera which presumably takes place after delivery; since it is known that in pregnancy the shape of the thorax alters, though its capacity is not diminished. In the present case the cause of the murmur was presumably the friction of the blood against a more or less kinked blood-vessel.

HÆMATOCELE FROM RUPTURED GRAAFIAN FOLLICLE.

By WILLIAM DUNCAN, M.D.

DR. WILLIAM DUNCAN showed the ovaries and tubes removed by his colleague, Mr. Bland Sutton, from a patient under his care. The right ovary contained a cyst (which had ruptured) the size of a walnut; the left ovary also contained a cyst which had ruptured, giving rise to a hæmatocele the size of an orange, which was limited by

a piece of omentum surrounding it. The patient had suffered for two years (from her last confinement) from menorrhagia and dysmenorrhœa. She made an uninterrupted recovery after operation.

CYSTIC OVARIES REMOVED FOR DYSMENORRHŒA.

By William Duncan, M.D.

Dr. William Duncan showed the ovaries removed from a woman, æt. 23, who had suffered from intense dysmenorrhœa ever since the onset of the catamenia. She had been subjected to a variety of treatment; blisters to the ovarian regions, division of the cervix, hot douches, &c., without any benefit.

Six months after Dr. Duncan removed her ovaries she was in perfect health and free from all pain.

Dr. Herman said that he did not think three months (the time during which Dr. Duncan had stated that he had observed the patient subsequent to operation) was long enough to judge whether pelvic pain was permanently removed by it. Nearly all patients suffering from pelvic pain were temporarily benefited by hospital residence alone, without other treatment. His own experience of the results of removal of ovaries simply for the relief of pain was unfavourable.

Mr. Alban Doran believed that, as Dr. William Duncan had suggested, the pain was caused by the cystic condition of the ovary. He further believed that, through some unknown influence, which might some day be explained, a cystic tumour of the ovary affected the general health of the patient before it produced any pressure effects. A very large, solid uterine myoma often altered a patient's expression but little, if at all; whilst a woman subject to ovarian cystic disease often presented a characteristic appearance, described by Spencer Wells and others, long before the tumour gave her trouble. Mr. Doran admitted that his statement was a hypothesis, but the ovary exerted a considerable influence on the organism when healthy, so that it was reasonable to infer that it also exerted a similar influence when not healthy.

Dr. Champneys asked Mr. Doran if he was not familiar with

cystic ovaries in infants as well as adults, no symptoms having been produced by their presence, and whether he considered the mere presence of cysts evidence of disease. He asked Dr. W. Duncan on what he founded his evidence of cervical stenosis.

In reply to Dr. Champneys, Mr. Doran admitted that cysts were found in the ovaries where no symptoms had existed, but there were many different varieties of cysts, and pathology showed that the same disease did not always produce the same symptoms. Where constitutional effects were observed, there was probably change in the stroma, as well as in the ever-growing cyst itself. A tense cyst in tough stroma might reasonably be expected to cause pain, in the ovary as elsewhere; and, as he had already suggested, there were probably physiological as well as mechanical effects produced by the growth of a multilocular cyst.

Dr. Braxton Hicks thought that Mr. Doran's explanation was the most probable, namely, that the pain arose from tension, and largely depended on the hardness of the ovarian tissues inside and on the surface of the organ.

CASES OF RUPTURED UTERUS.

By Joseph Griffiths Swayne, M.D.,

CONSULTING PHYSICIAN ACCOUCHEUR TO THE BRISTOL GENERAL HOSPITAL, AND LECTURER ON MIDWIFERY AT THE BRISTOL MEDICAL SCHOOL.

Of all the complications of labour, rupture of the uterus is the most fatal, and with the exception, perhaps, of inversion, the most rare. As regards its mortality, the lowest average deduced from hospital statistics, viz. that of C. Braun, gives it at 89 per cent., whilst as regards frequency, the highest average, that of Dr. Barnes* gives only one case of ruptured uterus in 1318 labours. Every case of the kind is worthy of record, and I therefore venture to bring before this Society my own limited experience of this accident. As Dr. Barnes justly remarks: "There are few subjects in obstetric practice more interesting or possessing a wider range of relations than rupture of the uterus."

I have only met with four cases in the course of my practice, but the first of these is especially worthy of notice, for it is one of those rare instances in which rupture takes place during gestation and is as follows:

1. On Wednesday, May 7th, 1856, I received a coroner's order to examine the body of Sarah Williams, the wife of a shoemaker, residing in Clarence Road, St. Philip's, Bristol. She was stated to have died during labour, and the relations imputed blame to the parties in attendance upon her. She was thirty-seven years of age, had given birth to six children previously without any difficulty, and had also miscarried twice. I was

* 'Obstetric Medicine and Surgery,' vol. iii, p. 312.

assisted in the post-mortem examination by the late Mr. Crosby Leonard. The body was beginning to decompose rapidly, although the examination was not more than twenty-four hours after death. The abdomen especially was much discoloured. Before opening the body we made a vaginal examination and found but little shortening of the cervix uteri. The os was high and difficult to reach; it would but just admit the index finger. A small hand could be felt presenting at the os internum. On opening the abdomen we found considerable extravasation of blood between the abdominal parietes and the peritoneum. The peritoneal cavity contained some reddish-brown serum; the intestines were streaked with red lines of inflammation and here and there slightly agglutinated; but the quantity of effused lymph was inconsiderable. The uterus had scarcely enlarged sufficiently to rise out of the pelvis; in front of it was a membranous bag somewhat resembling the bladder; this bag was connected with the uterus behind and the abdominal parietes in front. In attempting to remove the parts the bag gave way at one point, where it was very thin. We then found that it contained a fœtus of nearly five months' growth, and very much decomposed. A considerable quantity of blood was extravasated beneath the peritoneum covering the psoas muscles. On removing the parts and examining them we found a rent in the anterior part of the uterus, where it joins the bladder. It was about two inches in length, and ran obliquely downwards from left to right, extending through the muscular substance, but not through the peritoneal coat. The hand and foot only of the child were contained in the uterus; the rest of it had escaped, together with the placenta, through the rent and lay between the bladder and uterus, covered by the peritoneum which passes from one to the other. The bladder was healthy and contained very little urine. The other viscera were healthy.

On making inquiry of the midwife who attended her in the first instance I learnt that she had a very severe fall

about three months before her death, and from that time complained at intervals of pain in the left iliac region. There was also a discharge, which was occasionally profuse, of a dirty, offensive, watery fluid. At the time of the accident she considered herself to be seven months pregnant. From that time she appeared to decrease in size rather than otherwise.

Mr. Parsons, who subsequently attended her, gave me the following history of the case. He first saw her between 9 and 10 on Sunday, May 4th, three days before her death. He was then informed that a midwife had seen her and had gone away. She had at that time a slight bloody discharge coming from her. There were scarcely any pains properly so called, but rather an abdominal tenderness, which was increased on pressure. The os uteri was not sufficiently dilated to admit the tip of the finger, and no presentation could be felt. The woman was chilly, her countenance was blanched and her pulse weak and compressible. Mr. Parsons went away and saw her again at 12. She then seemed better, the pain was less and the discharge had ceased. He again left her, with orders to send for him if required. They sent for him on the morning of the following day. Mr. Parsons was then engaged with another patient, and advised them to get some medical man nearer at hand. However, they again sent for him in the afternoon of the same day, when, being disengaged, he saw her about 4 p.m. At that time symptoms of peritonitis were present. There was great abdominal tenderness, especially between the umbilicus and pubes, and much prostration of strength. There were no labour pains and no presentation could be felt. Mr. Parsons ordered six leeches to be applied to the abdomen, and a poultice afterwards, and gave her a dose of Battley's Liq. Opii Sedat., and also some Hydrargyrum c̄ Cretâ. He left her about 9 p.m. On Tuesday morning he was again summoned to her and went immediately, but found her dead when he arrived. The coroner's jury returned a verdict of death from natural

causes, and exonerated the parties in attendance from any imputation of neglect.

Remarks.—Instances of ruptured uterus during pregnancy, and especially during early pregnancy, are of rare occurrence; but a case like that described above, where the fœtus occupied so peculiar a position after its escape from the uterus, is, I believe, almost unique. In most cases rupture of the uterus during gestation has been the result of some obvious cause, such as blows or direct violence, abscess, or other organic disease of the walls of the uterus, &c. In some cases it has occurred without any assignable cause, and has been attributed to irregular action of the uterine fibres, as in that related by Mr. Scott, of Bromley ('Medical Repository,' vol. ii), where the patient was awakened from sleep by it. In another case, described by Mr. Glen, of Brompton, and quoted in Dr. Merriman's 'Synopsis,' the accident appeared to have been occasioned merely by stooping. Dr. Harrison ('American Journ. of Med. Science,' vol. viii) relates the case of a pluripara in whom rupture of the fundus uteri took place in the fifth month after a long walk. She felt a sudden and severe pain "as if something had given way within her," and died in a few hours. In the case I have just related there was much obscurity both as to the cause of the rupture and the time when it occurred. According to the midwife's account, the woman had a severe fall as much as three months before her death. At that time she considered herself seven months pregnant, but this must have been an error. The development of the uterus and of the fœtus both show that at the time when the death of the latter took place she could not have been more than five months pregnant. Conception having taken place during lactation, she had no certain data from which to reckon the commencement of pregnancy. The fall which she experienced most probably caused the death of the fœtus, as the abdomen shortly afterwards subsided, and ceased to increase; and an offensive discharge began to escape from the vagina.

The rupture of the uterus, however, could not have taken place much more than three days before death; for on Saturday, May 3rd, four days before her death, she was stated to have been as well as usual and able to attend to her ordinary household duties. On the third day before her death, when Mr. Parsons first saw her, rupture of the uterus appeared to have taken place, if we may judge from the symptoms which were present, viz. bloody discharge from the vagina, abdominal tenderness and collapse.

As to the cause of the rupture, it is as difficult to assign as the exact date of its occurrence. The state of the os uteri seems to show that there had been some slight attempts at labour, but the labour pains could scarcely have been sufficiently severe to cause rupture by their irregular action.

It did not appear that the accident arose from any external injury, for there were no marks of such on the body, and the careful inquiries of the coroner failed to elicit any evidence of violence. There was no thinning of the uterine parietes in the neighbourhood of the rent; and, on cutting into it, the tissue of that part appeared to be as firm and sound as that of the rest of the organ. On examining the tissue under the microscope and comparing it with that of a healthy uterus two days after delivery, there were some appearances of fatty degeneration, but still not sufficiently marked to enable one to say that they were not the result of those changes which ordinarily take place in the uterus after delivery. Hence the cause of the rupture appears to be as much veiled in obscurity as the other phenomena which were observed in this case.

Case 2.—On April 16th, 1868, I was requested by Mr. Corbould to see a patient of his, Mrs. H—, living in Union Street, Bristol, with a view to inducing premature labour, because she had been twice previously delivered by craniotomy on account of narrowing of the pelvis.

Having agreed that the operation was advisable I commenced it by inserting a long, slender sponge-tent. When the tent was removed the liquor amnii escaped, but the os was found to be very little dilated. I therefore continued the dilatation by introducing Barnes's bags, but the process was very slow, and I had to introduce three of them in succession. The os was then tolerably dilated, but yet there were no labour pains and no presentation could be reached. I therefore discontinued the use of the bags, thinking that, as the waters had escaped, delivery could not be deferred much longer. Mr. Corbould saw her (on April 15th) two days after this and found that labour pains had set in, accompanied with severe rigors. The patient seemed gloomy and depressed. The pains continued tolerably strong until the next day. The os was now well dilated, and Mr. Corbould, on recognising a shoulder presentation, sent immediately for me. I arrived on the afternoon of April 16th. The pains were then very strong and she was under the full influence of chloroform, which Mr. Corbould had administered. On examining, I found the whole of the right arm and shoulder (which was much swollen and ecchymosed) protruding beyond the os externum. As the pains were very strong, and more and more of the right side was protruded with each pain, so that there seemed a good chance of spontaneous expulsion, I determined not to turn, but to wait the course of events. After three or four strong pains, the whole of the right side, breech and inferior extremities, were expelled, and the rest of the child followed. It was a good-sized male child for eight months, and had apparently been dead for three or four hours. As soon as the effect of the chloroform had passed off, our patient complained of severe pain in the right iliac region and began to vomit. The vomiting constantly recurred for the next two days, the matters ejected being copious, at first bilious in character, but afterwards assuming the appearance of coffee grounds. Her pulse became very rapid, the abdominal tenderness increased, and there was much tym-

panites. We applied turpentine stupes, gave her opiates to allay sickness, and kept her up as much as possible by beef-tea, brandy, soda-water, &c. Still the symptoms continued unabated until the morning of April 18th, when she said that she was free from pain and had had a better night. There was no improvement, however, in the other symptoms, and in the afternoon of the same day she rapidly sank and died, exactly forty-eight hours after delivery.

We made a post-mortem examination on the following day. The body was very fat and already showed many signs of decomposition. There were some slight marks of peritonitis such as a few flakes of lymph, and turbid, reddish serum in the peritoneal cavity around the pelvic viscera. We found a rupture of the neck of the uterus just below the os internum. The opening would about admit two fingers. From thence there had been an escape of black, fœtid discharge, apparently altered blood and lochia, which had burrowed below the bladder and underneath the peritoneum forming the broad ligament, for a considerable distance into the iliac fossa, causing complete disintegration of the iliacus muscle. There was, however, no opening into the peritoneal cavity. On measuring the pelvis we found that the antero-posterior diameter of the brim was five inches and the transverse four and a half, so that the diameters of the brim were reversed, causing the pelvis to assume somewhat of the male form. It is difficult to account for the obstacles presented to delivery in the two previous labours.

Remarks.—There were two or three untoward complications in this case which no doubt contributed greatly towards the unfortunate result. The escape of the waters at the commencement of the process of dilatation and the transverse position of the child, tended in all probability to render this process tedious and difficult, and the long-continued pressure of the dilators tended to weaken the tissue of the cervix uteri and render it more liable to laceration when undergoing the tremendous strain put

upon it by the expulsion of the child in a doubled position; for there is every reason to believe that the rupture of the uterine neck took place at that time. In this case, as in the last, the peritoneal sac was uninjured, but there was very extensive extravasation into all the tissues beneath it, causing a shock to the system which rapidly proved fatal. Since the occurrence of these cases great improvements have been made in obstetric surgery as regards the treatment of ruptured uterus, but I cannot understand how a surgical operation would have been of any service in either of them. They were both instances of partial laceration of the uterus, but the two following cases are well-marked examples of complete rupture.

Case 3.—On November 8th, 1863, Mr. Hamilton requested me to see a Clifton Dispensary patient whom he was attending with Dr. Parsons. She had had six labours previously, all difficult, three of the children having been born alive and three still-born and delivered by instruments. Mr. Hamilton stated that the labour began about 5 a.m. and continued until 9 p.m. Though the pains were very severe the head had been immovably fixed for some time at the upper strait of the pelvis, where he could but just reach the ear. She then suddenly experienced a severe pain in the abdomen, with symptoms of faintness and collapse, followed by frequent vomiting, but not of a coffee-grounds character. The ear immediately receded out of reach. This was the account I received on visiting her at 10 p.m. Her countenance was then very pale, sunken, and anxious, the pulse so small and quick that it could scarcely be felt or counted; there was also great abdominal tenderness and urgent vomiting of a bilious character. The labour pains were very few and ineffectual, and had, in fact, almost entirely ceased. The head was now so high that the ear could not be reached without introducing the entire hand into the vagina. There was considerable diminution of the antero-posterior diameter of the pelvis; the upper part of the sacrum being

so prominent that it could readily be reached by the finger in an ordinary examination. The symphysis pubis also projected inwards in a very marked manner. On feeling the abdomen I could recognise every part of the child's body very distinctly through the parietes, especially at the upper part of the abdomen. After a consultation we agreed upon accomplishing delivery without delay. Finding it very difficult to apply the forceps, owing to the high position of the child's head, I introduced my hand for the purpose of turning. My fingers had scarcely passed the head when I felt the cord twisted round the neck and quite destitute of pulsation. As, therefore, there was no doubt of the child's death, I withdrew my hand and determined on performing craniotomy as an easier operation for the mother. This I accordingly attempted to do, but was at first unable to perforate the head, both from the firmness of the bones and from the impossibility of fixing it, for it receded as soon as the least pressure was made upon it with the perforator. To obviate this I passed up my hand and reached the mouth, which was opposite the left side of the pelvis; I then hooked down the lower jaw with two fingers and fixed it by means of the crotchet. I was thus enabled to perforate the head through the orbit, but I could not extract it until I had brought away by far the greater portion of the cranium. The body also was so large that there was some difficulty in extracting it. The infant was a boy and of unusually large size. After the operation the woman seemed to be in a state of great collapse. The pulse was almost imperceptible and there was constant abdominal pain. We gave her some brandy and forty minims of laudanum. She continued in much the same condition during the following days. The pulse was above 130 and very feeble; there was constant vomiting of a bilious character and persistent abdominal pain and tympanites, with great restlessness and want of sleep. She was freely supplied with stimulants and kept under the influence of opium, whilst turpentine stupes and bran poultices were applied to the abdomen; but she died

on the morning of November 13th, five days after delivery. Her husband refused to allow a post-mortem examination.

In this case the chief points worthy of notice are, I think, first, the absence of coffee-ground vomiting. Although there was no doubt that the uterus was extensively lacerated, this symptom, usually so characteristic of ruptured uterus, was never once present. Secondly, the time which the patient lived after the accident. By far the greater number of cases of ruptured uterus die at a much earlier period. For instance, out of forty-three cases of laceration of the uterus given by Drs. J. Clarke, Ramsbotham, and Collins, thirty-seven died within five days after delivery, and only six beyond that period. In the case just related death did not result from the immediate shock arising from the accident, but was caused by peritonitis subsequently. At the time when it occurred (more than twenty-three years ago) abdominal surgery was not so well understood as it is now, but I cannot help thinking that if laparotomy had been performed in the first instance, if the wound in the uterus had been carefully brought together by sutures and the abdominal viscera cleansed by carbolised sponges, there would have been a better chance of ultimate recovery.

Case 4.—About 10 p.m. January 9th, 1884, I was sent for to see Mrs. H—, Whiteladies Road, Clifton. When I arrived I received the following history of the case from Mr. Talbot, who was in attendance. She had had ten children previously, and all had been good labours. On this occasion she had not been well during the latter part of pregnancy, being troubled with cramps in the abdomen and tenderness in the epigastric region. The labour commenced on the morning of the same day, and went on well until about 6 p.m., when the head approached the pelvic outlet. At that time, whilst sitting on the night stool, she said that she felt something "hitch in her inside," and soon afterwards felt crampy pains in her abdomen, with excessive tenderness in the epigastrium. The

presentation then receded so far that it could scarcely be reached, and there was an entire cessation of proper labour pains. When I saw her her face was pale and anxious, and there was excessive tenderness when I placed my hand on her abdomen. The pulse was 100 and rather thready. There was no vomiting. On examining per vaginam I could scarcely reach the head, which was high above the pubes and very movable. The breech of the child could be felt very distinctly in the epigastric region close to the abdominal parietes. The fœtal heart-sounds could not be heard. Mr. Talbot said that a loop of cord had come down before the head, but had receded with it and could not now be felt. There was no doubt that the case was one of ruptured uterus, and I found, on inquiry, that my colleague, Dr. Aust Lawrence, had already seen the case, and, recognising its serious nature, had gone away to fetch one of his surgical colleagues at the hospital, Mr. Dobson, in case any operation should be required. On their return, we all agreed that delivery should at once be effected by turning, and after that laparotomy should be performed. Accordingly, after the patient had been brought well under the influence of chloroform, Dr. Lawrence proceeded to turn. Whilst so engaged he distinctly felt the rent in the uterus and the surrounding intestines. By passing his hand through the rent he succeeded in reaching one of the feet in the epigastric region and extracting the child without much difficulty. It was a stillborn male child of average size. A hypodermic injection of ergot was then given. As the placenta was still in the uterus, and as I wished to satisfy myself of the existence of the rupture I passed up my hand, and finding the placenta detached, brought it away. Before doing so I satisfied myself that there was a very extensive laceration in the anterior wall of the uterus. I could feel distinctly several coils of small intestine. The patient vomited two or three times after the labour was over, but there was none of the characteristic "coffee-ground vomit." We then, after a consultation, decided that laparotomy

would give her the best chance of recovery. Accordingly, having put her under chloroform and using carbolic spray and every other antiseptic precaution, Mr. Dobson laid open the abdomen by an incision from a little above the umbilicus to a little above the pubes. The abdominal parietes, when divided, appeared very bloodless, and there were no vessels which required tying. Having removed a large flat clot about the size of a soup plate, and sponged up a quantity of fluid blood, the surface of the uterus was fully exposed to view. There was a large rent extending obliquely on the anterior surface of the uterus from the right round ligament into the upper part of the vagina on the left side. The torn peritoneum had retracted about an inch both from the muscular substance of the uterus and from the upper part of the bladder. Having drawn off the urine, Mr. Dobson brought the torn edges of the uterus together by several stitches of carbolised silk, and then carefully united the torn edges of the peritoneum by several finer sutures of similar character. The viscera were then thoroughly cleansed by carbolised sponges, and the edges of the abdominal incision brought together by carbolised sutures and strips of adhesive plaster. After the operation, the collapsed condition of the patient increased; she appeared in a moribund state, and died about a quarter of an hour after its termination. When the uterus was exposed I observed on its anterior wall, near the centre of the fundus, a purple spot, which felt soft and pulpy, and the uterine appendages had an œdematous appearance.

In this last case the uterine laceration was so extensive that a good many sutures were required to bring the torn parts properly together, so as to prevent the subsequent escape of the lochia and other discharges into the abdominal cavity, for the uterus itself seemed to have very little power of contraction left. On this account, perhaps, the removal of the entire uterus by Porro's operation would have been preferable, but the prostration of the patient was so excessive, apparently quite as much from hæmorrhage as from shock, that we decided not to add to

this risk by an operation which might possibly involve a still further loss of blood. More than two years, however, have passed since the occurrence of this case, and these have added considerably to our knowledge as to the results of Porro's operation ; and although further statistics are required to settle the point as to the superiority of this operation over any other, yet the results which have been obtained by it so far hold out very good prospects of future success.

CASE OF RUPTURE OF THE UTERUS.

By Richard Cox, M.D.

On the 2nd of May, 1886, at 6.30 p.m., upon my return home, I found an urgent message requesting my attendance upon Mrs. A. C—, a multipara, æt. 38.

Upon reaching the house I was informed by the midwife in attendance that labour had commenced about 8 in the morning, and had gone on without causing any anxiety for some hours. The head, so the midwife said, could be readily felt, and the pains being very strong she expected an early termination of the case. Suddenly about 3 p.m. the patient became very sick and faint, and the expulsive pains of labour at once ceased, being followed by a different but more agonising and continuous pain. I was then sent for, but, as before stated, being unfortunately from home, did not reach the case until nearly four hours after this had happened. Upon examining the patient I found her quite sensible but almost pulseless, and evidently moribund. After administering a stimulant I made an external examination and could distinctly trace the contour of the child, the limbs, &c., being very readily felt through the abdominal parietes. Passing my arm into the uterus I found it empty, the fœtus with the

placenta having escaped into the abdominal cavity through a rent (which I estimated at about five inches) in the anterior part of the cervix behind the symphysis pubis. I seized a leg, and bringing the child back into the uterus effected delivery in a very short time, having, however, some difficulty with the head, which was arrested at the brim by an obvious contraction. The poor woman expressed herself as much relieved, but in a very short time sank from exhaustion though there was no hæmorrhage.

Having laid this painful case briefly before the Society I would ask this question, Was I justified in acting as I did to an obviously dying woman? Answering for myself only, I think I was, for, apart from the natural reluctance to allow a person to die undelivered, there was the chance of saving the life of the child (unfortunately not realised) and of somewhat mitigating the mother's sufferings, and I believe the older text-books bear me out in the line of treatment which I followed. I may add that her previous confinements had been natural, and she had always been attended by a midwife. Unfortunately I could not obtain permission to make a post-mortem examination.

Dr. Braxton Hicks said so many points presented themselves that it was difficult to select; but he thought that where delivery had been effected, and the uterus was found paralysed, where the rent was so large that a prolapse of the intestines occurred through the rent, the best plan was to perform Porro's operation, rather than to leave the case to its almost inevitable fate.

Dr. Horrocks remarked that one of the most important questions was how to act in cases of rupture of the uterus. Operations per vaginam were most difficult if not impossible to carry out. Abdominal section seemed to be the only method offering any hope. The question between carefully stitching up the rent after opening the abdomen, or removing the uterus (Porro's operation), should be decided after carefully examining the site and size of the rupture, and more particularly the condition of the torn parts. If severely lacerated, as was usually the case, Porro's operation probably afforded the best hope of

saving life. If the edges were cleanly cut an attempt might be made to bring them carefully together by sutures.

Dr. ROUTH said that besides the cardinal point insisted upon by Dr. Braxton Hicks there was another one, not one whit less important, to rule the treatment of such cases. If once the case was ascertained to be one of rupture of the uterus it was an unnecessary piece of cruelty and malpraxis to attempt to extract the child per vaginam, and to irritate the bowels by the hand. In so doing one ran the risk of enlarging the tear in the uterus, of increasing both hæmorrhage and collapse, and, if reaction subsequently occurred, of inducing inflammation. The rule should be to proceed at once to an abdominal section. Whether in cases of the tear being very ragged Porro's operation were preferable to sewing up the uterus, might admit of question, but in any case the child should be extracted by abdominal section and without delay, and not per vaginam.

Dr. GALABIN thought the cases related tended to show that, even notwithstanding modern improvements in abdominal surgery, rupture of the uterus involving the peritoneum would always be a very fatal accident. He had no doubt that in cases in which the child had escaped through the rent, if the condition of the patient permitted any interference at all, the operation ought to be abdominal section, and not removal of the child through the vagina. One reason for this, in addition to others, was that the double thickened wall of the empty retracted uterus occupied more of the pelvic diameter than it did when thinned and stretched over the fœtus. Extraction through the pelvis might therefore meet with great difficulty even in the case of a woman who had previously borne children by the natural powers. The injury to soft parts was then greatly increased by the operation. He thought that Porro's operation would very rarely, if ever, be advisable in the case of a ruptured uterus. In all the cases which he had met with, the rent had commenced in the vagina, or thinned lower segment of the uterus, although it might extend into the thickened retracting segment. It would not in such cases be possible to remove the whole of the rent by Porro's operation and shut off the peritoneal cavity. With a rent limited to the upper part of the uterus, such as might possibly be produced in the attempt to perform version, it might be advisable to perform Porro's operation, if the rent were ragged. He had performed abdominal section in two cases of ruptured uterus. In one, a case in which the intestines had been subjected to much handling in the attempt to extract the placenta through the pelvis before he saw the patient, he found that the rent was so low down and posterior, running in a transverse direction, that it was impossible to close it by sutures, and all that could be done was to sponge out the peritoneum, and secure drainage into the vagina. The patient died of peritonitis

after four days. In the second the rent ran transversely across the anterior wall of the uterus and both broad ligaments, and he found it possible completely to unite the edges of the peritoneum by sutures. The patient, however, died shortly after from the hæmorrhage and shock.

Dr. CHAMPNEYS thought everyone must agree with Dr. Routh that when the diagnosis of rupture of the uterus and escape of the fœtus is once made, no attempt should be made to extract the fœtus *per vias naturales*, nor should any second person examine per vaginam. He should like to hear further particulars about the pelvis in Case 3, in which the conjugate was said to exceed the transverse diameter at the brim. Were there signs of spinal deformity, spondylolisthesis, or kyphosis? He supposed that everyone who saw the description of a case of rupture of the uterus hoped for some information on the subject of the so-called ring of Bandl, but the dates of the cases dealt with in the paper showed that this could not be expected in the present instance. As regards the question of Cæsarian section *versus* Porro's operation, it must be remembered that Porro's operation, taking advantage as it had of all the latest antiseptic improvements, had been compared with the old-fashioned not aseptic Cæsarian section, and to the advantage of Porro's operation. Recent improvements in the Cæsarian operation by Sänger and others, especially in the matter of the sutures, had shown that this comparison was probably founded on a fictitious basis, the Cæsarian mortality having been enormously reduced. The principle of the sutures is the use of numerous deep silver and superficial silk sutures, the deep being passed through the uterine wall but not through the decidua, so as to leave no communication between the uterus and peritoneum; the superficial being so passed as to bring the peritoneal *surfaces* into contact. This principle of suture was applicable to the rent in uterine rupture, and he doubted if Porro's operation should in any case be preferred, especially as part of it is almost invariably below the muscular uterine body, and below the line of amputation, not to mention the additional injury caused by it. He doubted whether, in the future, complete rupture treated by abdominal section, cleansing, and uterine suture, would be more fatal than incomplete rupture with the formation of a thrombus communicating with the vagina, in which abdominal section is not indicated.

Dr. JONES (Enfield) said that the late Mr. Knowles, of Birmingham, attributed his success in the Cæsarian operation to his tearing through the peritoneum and taking care the ligatures did not pass through that membrane.

PAPILLOMA OF THE FALLOPIAN TUBE AND THE RELATION OF HYDROPERITONEUM TO TUBAL DISEASE.

By Alban Doran.

In systematic works upon the pathology of the female organs papilloma of the interior of the Fallopian tube is still noted as a curiosity. Rokitansky, Hennig, and other authorities speak of the papillomatous outgrowths as small excrescences, each about the size of a pea or a bean. They are generally described as an occasional complication of dropsy of the tube. Of papilloma of the tube, as a distinct disease producing clinical symptoms, very little is said in contemporary literature on the diseases of women. That little consists of brief references to a case under the care of Sir Spencer Wells and Mr. Bickersteth in 1879. A full report of the pathology of the case, with a short clinical history, prepared by myself, was published in the thirty-first volume of the 'Transactions of the Pathological Society of London.' Sir Spencer Wells noted the case in his 'Diagnosis and Surgical Treatment of Abdominal Tumours.' It has been referred to in several clinical text-books, such as Dr. Graily Hewitt's well-known work. Dr. Winckel quotes my pathological report,* but his own observations on the disease in question consist of a single line of text informing the reader that Hennig has found papillary growths on the mucous membrane of the tube. Dr. Bandl† merely observes that in chronic tubal catarrh papillary growths are found on the inner surface of the tube. To Professor Schröder's observation on my case I shall presently have occasion to refer.

It happens that, within seven years, I have seen two

* 'Lehrbuch der Frauenkrankheiten,' Leipzig, 1886, p. 579.

† "Die Krankheiten der Tuben, &c.," 'Deutsche Chirurgie,' Lieferung 59, 1886, p. 39.

cases of papilloma of the Fallopian tube, in both of which, contrary to all previous experience, the disease gave rise to definite symptoms. I cannot, therefore, help thinking that the disease must have sometimes been overlooked, and that it is not so rare as even I myself supposed until I observed the second case. I shall proceed to describe that case. Afterwards, some reference will be made to features of clinical and pathological importance in the first. Lastly, I shall make some observations upon the relations which, on the evidence of certain clinical phenomena in the first case, I believe may exist between hydroperitoneum and tubal catarrh.

The second case (I shall use this term specifically throughout this memoir to distinguish it from Mr. Bickersteth's or "the first case") occurred last winter under the care of Dr. Bantock, to whom I am obliged for the following notes. The patient was a married woman, aged 45, under the care of Mr. Johnstone, of Maidstone. Menstruation ceased a year before the operation, which was performed in December, 1885. The patient since the cessation of the catamenia had suffered from pelvic pain, frequent difficulty in micturition often requiring the use of the catheter, and severe pain during defæcation. The pelvic cavity was filled by a tumour, very resistant but obscurely fluctuating. The uterus was pulled up to the level of the pubes, the cervix was obliterated, and the fundus could be felt above the symphysis. The patient was fairly healthy, but had an expression of suffering. The tongue was clean. The bowels were very troublesome, owing to costiveness and to the pressure of the pelvic mass on the rectum.

The operation was performed by Dr. Bantock, with my assistance, on December 26th, 1885, at a nursing home. An incision about three inches long was made through the abdominal walls. On opening the peritoneal cavity a small mass, the size of a hen's egg, was found in the hypogastrium. It was connected with a knuckle of intestine by a very intimate adhesion troublesome to separate.

The muscular coat of the intestine was laid bare, and several points of continuous suture were applied to the torn edges of the peritoneal investment. The wall of the tumour in the hypogastrium was torn in the separation of the adhesion and some papillary growths were exposed. The mass in Douglas's pouch was then reached. It was cystic and contained about half a pint of a fluid the colour of a strong infusion of tea. After this fluid had been removed, an attempt was made to separate the connections of the cyst posteriorly, but this was found to be impossible. The cyst was torn open in front and allowed to collapse. It was apparently bilocular and did not contain papillary growths.

The mass first exposed was then examined. It appeared, after several adhesions had been separated, as a tumour with smooth, dark red walls. When the uterus was reached, I could see that the tumour was the right Fallopian tube, dilated and stuffed with papillomatous material. The relations of the uterine end of the tube and the broad ligament to the tumour were very plainly seen, but the right ovary was embedded in adhesions. The tubal tumour was removed. The peritoneal cavity was thoroughly washed out with warm water, and a drainage-tube was inserted into Douglas's pouch.

The tumour strongly resembled that which was removed in the first case, which is preserved in the museum of the College of Surgeons, Pathological Series No. 4584, and figured in my report in the 'Pathological Transactions.' The papillary masses were rather rougher and harder, some feeling cartilaginous.* One great difference could be

* This question of chondrification was discussed in my paper on the first case. Since its publication, Mr. Eve has discovered a tissue resembling cartilage in hypertrophied fimbriæ (see Lawson Tait, "An Undescribed Disease of the Fallopian Tubes," 'Obstetrical Transactions,' vol. xxv, 1883, p. 249, and Mus. R. C. S., Path. Series, Specimen 4584 A). Mr. Eve considers the cartilage-like nodules on the fimbriæ to be homologues of the cartilaginous bodies found near the head of the epididymis. There can be no morphological homology; it would appear more correct to regard them as histologically identical.

noted. The fimbriated extremity was completely closed in this second case. It must here be observed that no fluid was found in the peritoneal cavity. I regret to say that this valuable specimen was unfortunately lost. The patient also fared badly, her temperature rose, and she died on the fourth day with complete suppression of urine. The nature of the cyst in the pelvis could not be ascertained. To me it did not appear to be tubal and was certainly not papillomatous.

I will now recapitulate the chief features of the first case. A thin and emaciated spinster lady, living in very comfortable circumstances, and nearly fifty years of age, was attacked by symptoms of inflammation of the right ovary and severe menorrhagia, after absence of the catamenia for several months. Under the care of Mr. Bickersteth, of Liverpool, the patient recovered, after prolonged rest in bed. Five months later she suffered from hydrothorax of the right pleura and was tapped. Hydroperitoneum followed, and the abdomen was tapped three times in six months. These effusions involved no disturbance of the system. There was no rise of temperature, nor any sign of visceral disease. A year after the first tapping of the pleura Sir Spencer Wells examined the case. The abdomen was distended, the physical signs pointed to hydroperitoneum. The abdomen was tapped for the fourth time. The fluid, amounting to twenty-two pints, had a specific gravity of 1022 ; it coagulated almost entirely when boiled, after the addition of nitric acid. Dr. Caton and Mr. Thornton found, in the deposit, clusters of large, proliferating, vacuolated cells.* I was shown some of the deposit under the microscope and saw the cells ; this was in 1879. The patient is yet alive (1886). Thus vacuolated cells do not necessarily imply malignant disease. Professor Schröder, however, observes,† " Ein Papillom der Tube von jedenfalls maligner

* Similar cells had been found by Dr. Caton in the pleural fluid.

† ' Die Krankheiten der Weiblichen Geschlechtsorgane,' 7th edition, 1886, p. 361.

Bedeutung hat A. Doran beschrieben." This opinion has, fortunately, not been verified.

After the fourth tapping, the uterus could be felt freely movable and so low down in the pelvis that the cervix almost protruded from the vulva. Behind the uterus was a hard nodular mass. There was evidence of a small amount of fluid in the right pleural cavity. On April 28th, 1879, Sir Spencer Wells removed the tumour. Seventeen pints of fluid escaped from the peritoneal cavity. The tumour consisted of an oval body the size of a large orange, formed by a dilatation of the right Fallopian tube, stuffed with papillomatous growths. A bristle could be passed through the channel of the tube at the point where it had been cut through, close to the uterus. This bristle could also be made to traverse the growths and emerge at the ostium, which was unobstructed and surrounded by the shortened and thickened fimbriæ. A semi-opaque mucoid fluid dripped from the ostium. The right ovary was removed with the tube. The uterus and left appendages were perfectly healthy. The minute pathological characters of the tumour are described in the 'Pathological Transactions,' as above indicated. After a rapid recovery, the patient was attacked with pleurisy, on the right side again, in August, 1879. There was no effusion. This complication subsided. The patient was in perfect health when last heard of, in the summer of 1886.

The pathological significance of this disease is not easy to decide. It is not clear whether it be pathologically identical with papilloma of the hilum of the ovary and parovarium. If it be identical it is not comprehensible why papillary growths, so common in the last-named structures, should be so rare in the tubes. There is no morphological relation between the said structures, relics of the Wolffian body, and the tube, developed from Müller's duct. In the first case—I mean, as already explained, Sir Spencer Wells's case—the ovary and broad ligament were absolutely free from disease. I examined them

carefully after the exhibition of the specimen before the Pathological Society in October, 1879, because Mr. Thornton then suggested that the papillomatous disease might have arisen in the broad ligament. The papillary growths might have been due to hypertrophy of the longitudinal folds of the mucous membrane of the tube. In the second case I failed to detect any evidence of papillary disease outside the tube, but only a small part of the right appendages could be removed and none of the left could be taken away. However, as above noted, the papillomatous disease of the tube precisely resembled that in the other case.

It is very reasonable to suspect that papilloma of the tube may be inflammatory ; a form of salpingitis, in fact. The first case especially suggests this theory, which is important in relation to the question of hydroperitoneum yet to be discussed. The papillomata then would be allied, not to the papillomatous masses found in tumours of the hilum of the ovary, but rather to the masses of warts seen around the vulva in unclean subjects affected with chronic gonorrhœa. Whilst, however, other undoubtedly inflammatory diseases of the tube are now known to be very common, papilloma of the tube is exceedingly rare. Still, papillomatous growths, very small, it is true, have long been observed in hydrosalpinx,* a disease of inflammatory origin, where adhesions have closed the fimbriæ and ostium. In the two cases there was strong clinical evidence of inflammation of the appendages. Lastly, the absolute non-malignancy of the papillary growths in the first case, notwithstanding certain formidable symptoms, strongly favours the inflammatory theory.

The first case, where the patency of the ostium caused

* I found some small growths of this class in a dilated tube removed, together with a cystic ovary, by Mr. Thornton a few years ago. I made a note of this specimen in 'Clinical and Pathological Observations on Tumours of the Ovary, &c.,' but as the case could not be considered a pure example of the disease under discussion I have not described it here. The tube was closed, and there was no peritoneal effusion.

escape of fluid and consequent hydroperitoneum, is very suggestive. May not hydroperitoneum be frequently due to tubal catarrh, though not necessarily to papilloma? Let the ostium remain unobstructed, an exceptional condition in salpingitis, and it is easy to understand how hydroperitoneum might soon arise from the constant irritation of inflammatory exudation dripping out of the tube into the peritoneal cavity. It must be understood that I employ the term hydroperitoneum to a certain extent after the definition of Dr. Matthews Duncan. That is to say, I signify a case "in which there is no organic or tangible disease discovered, beyond the conditions of the peritoneum itself, to which the collection of fluid can be referred."* This is the clinical definition of the case. I believe that pathology may prove that there is sometimes a tangible disease beyond the condition of the peritoneum. That disease is salpingitis with unobstructed tube. For convenience, however, the term hydroperitoneum may be retained.

Cases of suspected hydroperitoneum pure and simple have often proved to be instances of effusion, the result of papillomatous tumours growing free in or above the pelvis, or of the rupture of cysts containing papillomatous, adenoid, or malignant growths. Strange to say, widely diffused papilloma of the peritoneum, even when secondary to ovarian disease, is not invariably malignant, as Thornton and others have observed. In my first case there was papilloma and hydroperitoneum. When the former was removed the effusion never recurred. Here the papilloma had not diffused itself and did not prove malignant. Hence one fact is proved: hydroperitoneum may be due to non-malignant papillomatous disease, and the site of that disease may be in the Fallopian tube.

Still, hydroperitoneum has repeatedly been observed when no papillomatous growths could be found within or adjacent to the peritoneal cavity. In one case under my own observation, chronic ovaritis or some kindred affec-

* 'Clinical Lectures on the Diseases of Women,' 3rd edition, lecture xiv.

tion of the ovaries existed.* Dr. Bantock removed the ovaries; the peritoneal effusion did not recur.

Lastly, I must return to the proposition already discussed when considering that papilloma of the tube may represent a form or result of inflammation of the tube. The first case proves that papillomatous salpingitis, as the disease should be termed under this theory, causes hydroperitoneum if the ostium be not obstructed. Let the papillomatous complication be subtracted, and only chronic catarrh remain, may not hydroperitoneum still develop itself? This brings me back to another proposition already made in this paper, namely, the theory that catarrhal fluid escaping from the tube may irritate the peritoneum and cause effusion.

If this last theory be correct, as I firmly believe, why is not hydroperitoneum from tubal disease more common? This question brings us once more round to another subject already discussed. Salpingitis almost always causes closure of the ostium of the tube, so that the peritoneum is protected. In other cases the disease sets up local peritonitis, causing adhesions of the ovary, broad ligament, tube, and other structures. These adhesions very soon close the tube by bands which press on its outer surface, or by effusions which mat its fimbriæ together. In this manner the general peritoneal cavity is saved from irritation. All this local peritoneal mischief appears to me to represent an acute form of salpingitic complication, of which hydroperitoneum is a mild form. In fact, salpingitis cannot set up hydroperitoneum except it be so mild and so purely catarrhal as neither to cause closure of the ostium nor to inflame acutely the pelvic peritoneum. Hence the salpingitis of childbirth, abortion, and gonorrhœa can seldom, if ever, cause simple hydroperitoneum, though it is a fertile source of hydrosalpinx, pyosalpinx, and pelvic peritonitis. This closure of the ostium is a most fortunate complication in so far as it protects the

* "Hydroperitoneum traced to Chronic Ovaritis; Oöphorectomy; Recovery," 'British Medical Journal,' vol. ii, 1881, p. 699.

peritoneum. In my second case, the closure of the papillomatous tube saved the patient from hydroperitoneum. But if severe salpingitis be so common, a milder form must be more frequent, and it is this milder form which is probably a frequent cause of hydroperitoneum.*

In conclusion, I will summarise my opinions and observations.

1. Papilloma of the Fallopian tube is a rare disease, but may exist and produce marked symptoms. The papillary growth may represent not so much a true tumour as a product of inflammation. It is at least not malignant.

2. A pelvic tumour, which may extend into the hypogastrium, always exists. Pain does not appear to be essential and when present is possibly due to other pelvic disorders.

3. In one case under my observation the diseased tube was closed, the symptoms were entirely pelvic, and no hydroperitoneum was present. Under these circumstances, then, papilloma of the tube may simulate hydrosalpinx and pyosalpinx, but the symptoms would probably be, as a rule, less acute.

4. In the other case, the ostium of the tube remained patent and hydroperitoneum persisted till the diseased tube was removed. The evidence that secretion escaped from the ostium was positive.

5. For reasons given at length in this memoir, this case suggests that hydroperitoneum may frequently, though not invariably, be due to mild chronic catarrh of an unobstructed Fallopian tube.

On the motion of Dr. Routh, seconded by Dr. Horrocks, the discussion was adjourned to the November meeting.

* "Lately I have seen a large hydroperitoneum and right hydrothorax following an abortion with much bleeding. The fluid has all disappeared during the fourth month following the abortion" (J. Matthews Duncan, loc. cit.). Observe that precisely the same kind of effusion existed in my first case. The presence of mild salpingitis in Dr. Duncan's case was highly probable.

NOVEMBER 3RD, 1886.

J. B. POTTER, M.D., President, in the Chair.

Present—28 Fellows and 7 visitors.

Books were presented by Dr. Playfair, the Clinical Society of London, and the Medical Society of London. Dr. Chaple, through Dr. Herman, presented a pair of forceps to the museum.

Frederick Bazley Fisher, L.R.C.P.Lond. (Dorchester); Henry Croker Garde, L.R.C.P. and S.Edin. (Queensland); and Samuel Parsons Smith, L.K.Q.C.P.I. (Croydon), were declared admitted Fellows of the Society.

The following gentlemen were elected Fellows of the Society:—William Percy Ashe, L.R.C.P.Lond. (Chislehurst); A. H. Freeland Barbour, M.D.Edin. (Edinburgh); Ambrose E. L. Charpentier, M.B.Dur. (Uxbridge); Lansdown Murray Guilding, M.A., M.B.Oxon. (Reading); Horace Hartley, L.R.C.P. and S.Ed.; Sidney Fred. Harvey, L.R.C.P.Lond.; Charles Hoar, M.B., C.M.Aber. (Hurst Green); Herbert Chamney Hodges, L.R.C.P.Lond. (Watton); William George Holloway, B.A., M.B.Cantab.; John Stuart Hutton, L.R.C.P.Lond.; Frank Bingley Pullin, L.R.C.P. (Peel); Arthur Creswell Rich, M.D. Lond. (Liverpool); Arthur Dumville Roe, B.A., M.B. Cantab. (Wandsworth); Robert Sanderson, M.B.Oxon. (Brighton); Edward Stewart, M.D.Brussels; William W. Webber, L.R.C.P.Ed. (Crewkerne); George Fred. Welsford,

B.A., M.B.Cantab (Woodstock); Charles J. West, L.R.C.P.Lond. (Streatham); Robert Wharry, M.D.Aber.; and Walter Essex Wynter, F.R.C.S. (Twickenham).

MICROSCOPIC SECTIONS OF CANCER OF THE NECK OF THE UTERUS.

By P. Horrocks, M.D.

MICROSCOPICAL SECTIONS OF A UTERINE POLYPUS, SHOWING CILIATED EPITHELIUM.

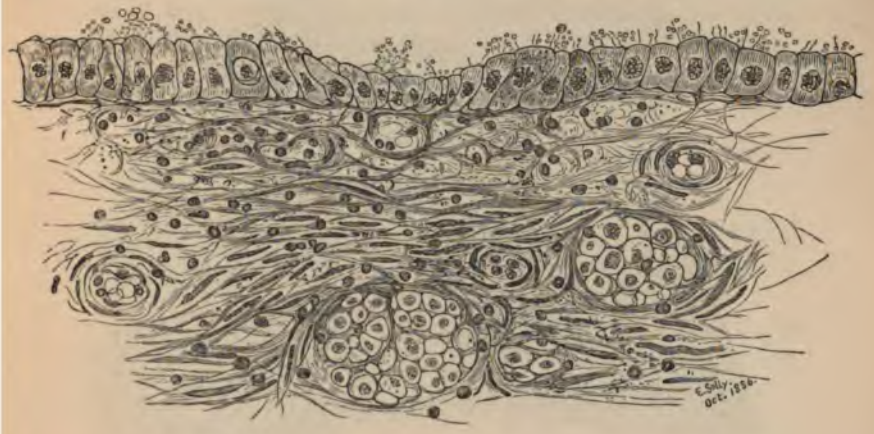
By Henry Gervis, M.D.

Dr. Gervis showed some drawings of microscopical sections of the surface of a pedunculated fibroid polypus made by Mr. E. Solly, of St. Thomas's Hospital. The polypus had passed out of the uterus into the vagina, but its pedicle was attached to the posterior uterine wall, and Dr. Gervis had removed it with the écraseur. On the pedicle the drawings showed very clearly the transition of the surface epithelium from the columnar to the squamous type, but on the surface of the tumour itself, which had been for some time in the vagina, the epithelium was wholly squamous, while in any crypt or follicle which existed on the surface, the contained epithelium was not only columnar but ciliated.

Section through part of pedicle occupying cervical canal.

The mucous covering consists of a single layer of short columnar and cubical epithelium cells without cilia. At the point where the tumour protruded from the external

os the character of the mucous membrane is slightly altered; an incomplete layer of polygonal or slightly flattened cells lying over the columnar layer, some of them in close contact with the free ends of the columnar cells, others much more loosely connected with them, apparently

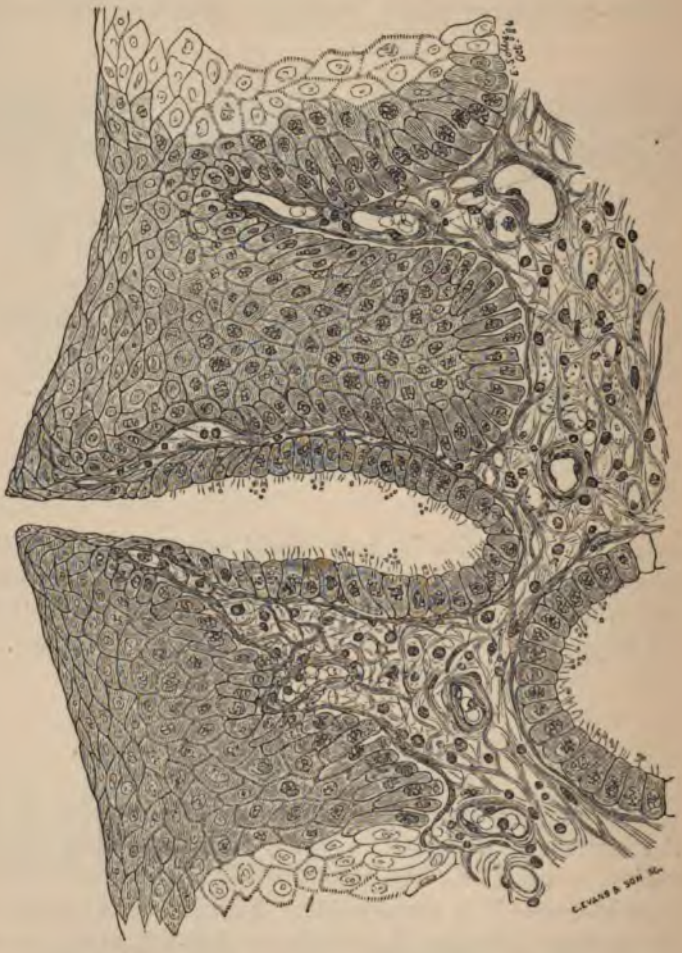


only held in position by some viscid mucus. In fact, the arrangement is similar to that found at the point where the transition occurs from the columnar ciliated cell of the larynx to the squamous lining of the pharynx, &c.

Section through part occupying the vagina.

The mucous membrane covering this portion is of the squamous tesselated variety, similar to that of the vagina, mouth, &c.; the number and distinctness of the "prickle cells" is remarkable. From various points of the surface follicular ingrowths of epithelium are seen projecting downwards into the submucous areolar tissue, and in these the cells form a single layer of cubical and short columnar epithelium, most of them being distinctly ciliated. The transition from the squamous to the columnar

type of cell at the mouth of the follicle is very abrupt. In the drawing the neck and the deeper expanded portion



of *one* follicle are seen, appearing, however, to be separate owing to the direction of section ; and the cilia are repre-

sented as longer and more prominent than was the actual case.

Dr. W. S. A. Griffith stated that the change of character of the epithelium covering a polypus after its protrusion from the uterus into the vagina was mentioned by Cornil and Ranvier. Dr. Griffith has observed a further change in a small polypus which hung outside the vulva from a procident uterus, the surface epithelium having become dry and horny as on the surface of the skin.

ADJOURNED DEBATE ON MR. DORAN'S PAPER ON PAPILLOMA OF THE FALLOPIAN TUBE.

Dr. Routh expressed his obligations to Mr. Doran for his valuable paper. In a former one he had shown them, by the actual morbid specimen, how disease of the Fallopian tube could be produced by extension of inflammation of the vagina, as in gonorrhœa, leading on to endometritis, pyosalpinx, peritonitis, and death. He had now shown that the Fallopian tubes were liable to be affected with papillomata and become a very painful disease.

Now, could a similar propagation upwards produce these papillomata? He thought it exceedingly probable. Occasionally not only the vulva but the entire vagina and neck of the uterus became studded with warts. Some kinds of polypi and cauliflower excrescences likewise were found *in utero*. The structure of all these when microscopically examined were similar,—columnar epithelium outside, next a hyaline membrane, next the vessels, more or less numerous, next the stroma, made up of small fusiform connective-tissue cells. Warts, however, in the vagina were perhaps sometimes covered with some squamous epithelium also.

Now, from what source did these warts originally arise? He must say that in those cases where warts in any large

quantity existed, they were to be found either in married women or women who had had sexual intercourse. In any case they were eminently contagious and might possibly be caught as ordinary warts were. The contact of a warty secretion or inoculation from one in a dirty locality could reproduce a wart. In fact, possibly they were in some cases sequelæ of venereal disease, like condylomata and the "tubercules muqueux,"—just as those cases of so-called pseudo-syphilis or phagedenic ulcers might, according to Mr. Jonathan Hutchinson's views (expressed in his Lettsomian lectures on some moot points of syphilis), be stated to occur from a modified syphilitic taint but were not capable of infecting a patient constitutionally. Unclean habits and direct infection, apart from syphilitic disease, might produce them. Certainly, means which were found to cure syphilis often completely cured these warts.

But it would seem that according to the seat of these papillomata the secretion from them varied. In the vagina they gave rise to a very fœtid secretion, in the uterus, to a sanguineous one, in the tubes, to a very acrid or but slightly irritating secretion. Fortunately, in the former cases the violent inflammation produced caused closure of the fimbriated extremity, and so extension of the inflammation to the peritoneum was often prevented. In the latter cases the secretion resembled rather a mild catarrhal fluid, the irritation from which was insufficient to bring about closure of the fimbriated extremity and so hydro-peritoneum, or, more properly, sero-peritoneum (for the secretion was to all intents and purposes serum), or papillomata resulted. Indeed, it seemed to him highly probable that papillomata of the fimbriæ might give rise to the papillomata of the peritoneum and ovaries. They usually were found more in abundance on the ovaries and their immediate neighbourhood, as if indicating extension of their growth, or of their contagious secretion. If later on the papillomata were not found in the Fallopian tubes it was no proof they had not existed there before, but

rather that, like an ordinary catarrh, or like warts elsewhere, they had been cured.

One point, however, required notice here. It was affirmed, and he thought he had heard Mr. Knowsley Thornton make the assertion in that Society or in some other, that sometimes papillomata on the peritoneum entirely disappeared after operation, while at other times they assumed a malignant type. Surely the explanation was, that in the former examples there was no cancerous diathesis, in the latter there was; and exactly as a blow, or a sore, or irritation in a benignant tumour might attract and centralize cancer in a person with cancerous diathesis so benignant papillomata might become malignant.

The conclusion to be drawn from all these general principles was to enforce the necessity of treating these cases early and so to prevent the extension of serious disease. In papillomata of the tubes we had severe pain, whereas in other papillomata (if we excepted perhaps "tubercules muqueux") there was more. This implied in any case some kind of inflammatory process, which if treated early might arrest all extension of disease in the future.

Dr. Horrocks said that *a priori* diseases of the Fallopian tubes should be rare, because they had such an easy function to perform. In a careful investigation made, at his request, in the post-mortem room at Guy's Hospital by Drs. Goodhart, Mahomed, and Carrington during the last three years, there was not one instance of papilloma of the Fallopian tube, and considering the large number of post-mortem examinations this would prove that the affection must be looked upon as very rare. When it did occur it would be difficult to diagnose. He called attention to the fact that in the two cases detailed by Mr. Doran there was no hæmorrhage. Although some cases might be venereal in origin, and gonorrhœal rather than syphilitic, it was a well-known fact, that whilst syphilitic diseases of the vulva were very common they were almost

unknown in the cervix uteri, and thus were hardly likely to affect the genital canal still further away from the vulva. Still it would do no harm to try the effect of mercury and iodide of potassium where papilloma was suspected, though, probably, nothing short of removal by the knife would be curative.

Dr. Gervis, after alluding to the very interesting and important character of Mr. Doran's paper, gave some particulars of a case of pelvic papilloma he had recently operated upon, in which the papillomatous growths covered the tubes and ovaries on both sides and were also scattered about on the neighbouring peritoneal surfaces. The patient had been tapped for ascites six weeks before Dr. Gervis saw her, and the fluid distension was again very considerable. Dr. Gervis removed a moderate-sized cyst which was present and as much of the papillomatous outgrowths as was practicable. The patient made a good recovery, and up to the present time, between three and four months from the operation, there had been no recurrence of the hydroperitoneum. Dr. Gervis would like to ask Mr. Doran how he thought papillomata on the peritoneum originated if they were not primarily tubal. As to Dr. Routh's suggestion, that they originated in syphilitic infection, Dr. Gervis thought it must be received with much doubt.

Dr. Champneys had recently admitted a case into St. George's in which abdominal section had been done four years ago, and the peritoneum, including the liver, had been found covered with papillomata, springing apparently from the region of the tube or ovary. The peritoneum had been sponged out and a drainage-tube inserted. The patient had no symptoms till two months ago, when a soft swelling appeared in the line of incision, and on being opened discharged a little serum with a few pus-cells. A probe could be passed in the track of the drainage-tube to the abdominal aorta. No recurrence of the disease had taken place.

Mr. J. Bland Sutton observed that he had made a careful study of Fallopian tubes removed for various diseases, and had found that in cases of ovaritis due to extension of gonorrhœa, a papillomatous condition of the mucous membrane was not infrequent, and he had found it possible to trace every gradation, from simple, or slightly branched villi, to dendritic masses with narrow peduncles completely occluding the tube. Although papillomata of these ducts in a moderate degree are not rare, yet it is exceptional for them to attain such proportions as in Mr. Doran's case. There is good reason to believe that gonorrhœal discharges may not only produce warts on the labia, but in the Fallopian tubes, if the inflammation extend in that direction, and even on the surface of the ovaries. He also stated that papillomata, similar in their nature, are to be observed in the oviducts of fowls when inflamed.

The subject of Mr. Doran's paper, papilloma of the Fallopian tube, had for him an intrinsic interest, especially as two years ago, whilst engaged in investigating on a broad basis the pathology of cysts and tumours connected with the reproductive organs of animals, he made a careful and critical study of the case so well described by Mr. Doran in the 'Path. Soc. Trans.,' vol. xxxi.

The details of that specimen, as well as the figures which illustrate the communication, left no doubt on his mind that the growths in the tube were in nature warts, similar in principle to those found in other situations, viz. overgrown papillæ the result of continued irritation. This second case came at a time when he was just fresh from a prolonged study of warts in general, and papillomata associated with the generative organs in particular. The points especially indicated for discussion in the memoir before us were:—(1) The nature of the papillary masses in the tube. (2) What relation, if any, they bore to the warty masses found in certain cysts of the ovarian hilum (or as he preferred to call it, the paroöphoron) termed papillary.

With regard to papillomata of the Fallopian tube there

could be no doubt that they were simply enlarged and overgrown rugæ characteristic of its mucous membrane, and though he admired the cautious manner in which Mr. Doran expressed himself on this point, it was a pity that he did not summon sufficient courage to make the statement dogmatically, for his knowledge of these matters rendered him an exceedingly competent judge on this head.

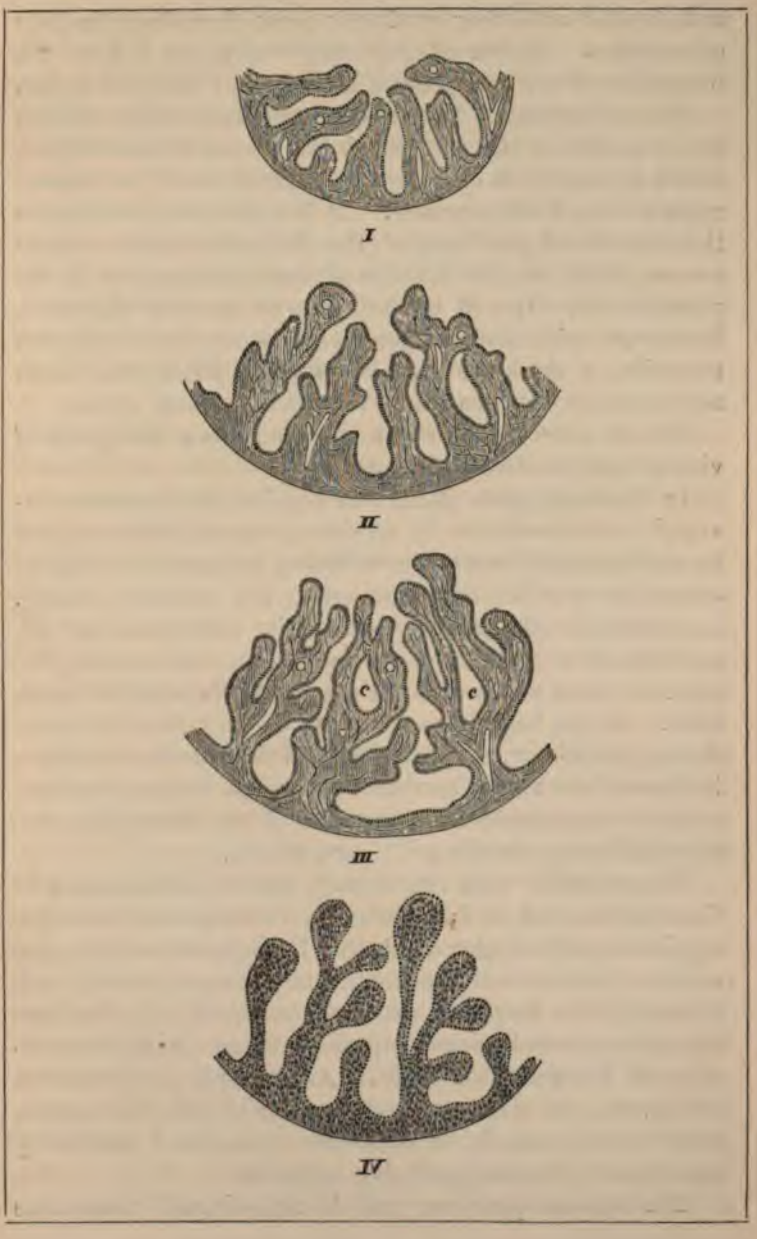
In questions of this sort two roads were open to the investigator; one was to find intermediate conditions between the normal state and the most aberrant deviation presented by the part under consideration, the other was to seek aid from comparative pathology. He should solicit assistance from both methods.

During the past twelve months he had received from various operators a large number of uterine appendages removed for a variety of causes. Of these specimens he had submitted the Fallopian tubes to microscopical examination, and the results might be given briefly as follows:

Fig. 1. This represents a slightly magnified view of a normal Fallopian tube. The section in this as in the succeeding cases was taken about an inch and a half from the ampulla of the tube. The rugæ, as seen in section, are fairly simple, possessing a framework of connective tissue with small blood-vessels and surmounted by columnar ciliated epithelium. In preserved specimens cilia are difficult to demonstrate.

Fig. 2. This was taken from a case of ovaritis gonorrhœal in origin. The tube was distinctly enlarged, the rugæ increased in size with well-marked secondary processes.

Fig. 3 is from a case of pyosalpinx. The tube was larger than in the case shown in Fig. 2, and its interior was nearly filled with papillary growths which presented a beautiful spectacle when viewed under the microscope after being stained with carmine. In the majority of cases the papillomatous masses were connected with the wall of the tube by a narrow pedicle, and then branched


I
II
III
IV

and divided until they produce a most charming dendritic appearance. Fusion of adjoining tufts has led to the formation of secondary cysts as seen at *c* in the drawing.

From this stage it is an easy transition to that exhibited in the specimen the subject of Mr. Doran's observations, which is simply an excessive exaggeration of the normal rugæ of the Fallopian tube. It is unnecessary to discuss the relation of papilloma of the Fallopian tube to warty masses found in the interior of cysts originating in the paroöphoron. It will be sufficient to mention that cysts lined with epithelium, either epiblastic or hypoblastic, are exceedingly liable to develop warts. Distinction must also be made between warty ovaries and warty cysts.

Let us now consider the question from the point of view of comparative pathology.

In the Sauropsida (birds and reptiles) the ova are conveyed to the exterior by oviducts, muscular tubes lined by mucous membrane communicating by means of a dilated extremity—the infundibulum—with the peritoneal cavity. In mammals above the prototheria (monotremata) the oviducts fuse to form a median uterus and vagina, the anterior third remains as an egg-duct, viz. the Fallopian tube. In the breeding season the oviduct, like the uterus during pregnancy, varies in size, and the mucous membrane is thrown into ridges so that a transverse section produces a villous appearance as in the case of the Fallopian tube, the villi being, for the most part, simple.

The common fowl occasionally suffers inflammation of the oviduct, and its existence may be suspected when the egg has a very roughened shell. If sections of an inflamed oviduct be examined under the microscope we shall find, instead of the simple or sparingly branched villi, dendritic masses somewhat resembling those found in allied conditions of the Fallopian tubes. An example is represented in fig. 4. In structure they consist of cellular masses, with a small amount of connective tissue and limited by columnar epithelium, probably ciliated.

The various processes end in club-shaped extremities

and constitute striking objects under the microscope. These cases are of peculiar interest inasmuch as they offer independent testimony to the effect of inflammation in producing abnormal growth of the papillæ.

Although male birds are privileged to have a large number of hens, yet no one would hold them guilty of immorality; at any rate, no one has found syphilis among them. So that it is unnecessary to regard this disease as the cause of papillomata of the Fallopian tubes.

The inference seems very clear: gonorrhœal and other irritant discharges from the genital passages are potent agents in producing warts about the labia and vagina, or around the prepuce in the male. If the inflammation extend to the recesses of the Fallopian tubes warts arise in that situation, and in some instances, though less frequently, a crop of papillomata may appear on the surface of the ovary.

Lastly, it may be confidently asserted that papillomata of the Fallopian tube, in a moderate degree, are by no means infrequent, but it is rare that they attain such proportions as in the case considered in Mr. Doran's very interesting paper.

Mr. Alban Doran, in reply, said that Dr. Routh's generalisations could not be directly applied to the two cases of papilloma of the interior of the Fallopian tube, upon which the paper was based. There was no probability of venereal taint, at least in the first case. With regard to hydroperitoneum, he had explained how most diseases of the tube sealed up the ostium and saved the peritoneum from irritation; still a mild catarrh of the tube, such as might be due to gleet, might fail to cause the ostium to be closed and thus some discharge would escape into the peritoneal cavity and cause hydroperitoneum. In this sense, Dr. Routh's theories were in accordance with pathology. Dr. Horrocks had stated that he and two other highly competent observers, working at a great metropolitan school, had failed to discover any cases of

papilloma of the tube during long experience in the post-mortem room. This was valuable evidence, yet notwithstanding active pathological work of the same kind all over this country and the Continent for thirty or forty years, pyosalpinx and hydrosalpinx had also been held as very rare diseases till Mr. Tait and Dr. Kingston Fowler had exhibited at different societies numbers of specimens which proved that those disorders were very frequent. In neither of the two cases was the disease diagnosed, nor could any practitioner be expected to diagnose a disease whilst it was as yet practically unknown. The rarity of papilloma of the tube had been attributed by Dr. Horrocks to the theory that the tube did not discharge very active functions, but some persons would dispute this theory. The cases noted by Drs. Gervis and Champneys suggested that catarrh of a not papillomatous tube might set up not only hydroperitoneum but also papillomatous disease of the peritoneum. Mr. Doran agreed entirely with Mr. Sutton, and disavowed any intention to suggest that papilloma of the tube was a disease of the same class as papilloma of the hilum of the ovary or broad ligament. He exhibited two specimens of broad ligament papilloma where the appendages were buried in cauliflower excrescences, yet there were no papillomatous growths inside the tubes. A tumour was detected in both his cases, and in any future case the tube would, he believed, be quite sufficiently enlarged to be readily detected on bimanual examination.

ON THE OBSTETRICS OF THE KYPHOTIC PELVIS.

(Second Communication.)

By Francis H. Champneys, M.A., M.B.Oxon, F.R.C.P.,
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In a paper "On the Obstetrics of the Kyphotic Pelvis" in vol. xxv (for 1883) of the Society's 'Transactions,' I gave an analysis of the mechanism of labour in thirty-two labours occurring in twenty women.

Some of the conclusions then arrived at were the following:

The head is usually more or less transverse at the beginning of labour, and not antero-posterior as usually described.

During labour the occiput rarely turns forwards, deep transverse position is common, and posterior rotation is not uncommon.

The head sometimes (probably most commonly) passes out of the pelvis practically between the tuber ischii in front and the sacrum and coccyx behind, entirely neglecting the anterior part of the pelvis.

The conclusions were directly contradictory of the received accounts.

In the discussion Dr. Galabin, remarking on this, said, "It was also held, and he thought correctly, that to find the sagittal suture running more antero-posteriorly than usual when the head was at the brim, was an indication of transverse contraction of the pelvis. . . He asked Dr. Champneys how he explained it that in these cases the head did not adapt itself at all to the shape of the pelvic brim."

I replied "that the position of the head at the end of pregnancy was determined by the adaptation of the whole ovum in the fœtal attitude to the uterine cavity, which was wider from horn to horn than from before backwards (it is also dependent on the flotation of the fœtus in the inclined uterus). In accordance with this, and remembering the dextral obliquity and dextral torsion of the uterus, the back (*i. e.* the occiput) at this time most commonly pointed to the left and a little in front (first position of Naegele), or to the right and a little behind (third position of Naegele). When labour began, a new set of conditions arose, namely, the adaptation of the head to the brim, but no alteration of position would take place unless the head more or less fitted the brim. Now, in most kyphotic pelves (which, but for their deformity, were good pelves enough, and not usually dwarfed like rickety pelves), although the conjugate was larger than the transverse diameter of the brim, there was plenty of room for the long diameter of the head in the (lesser) transverse diameter of the brim, and there was therefore no force to change its position. The clinical facts tallied with this."

Dr. Galabin, in his recently published 'Manual of Midwifery,' gives an account of the mechanism which does not convey a clear idea to my mind. He says (p. 522): "It might be expected that the long diameter of the head would enter the long diameter of the brim, and it doubtless does so, when it fits the brim at all tightly. But it is often found that the long diameter enters obliquely, or even transversely." . . . Then follows a *résumé* of my description of the mechanism.

A few lines lower down Dr. Galabin quotes my statistics as to the results of the labours to mothers and children, and says: "These results doubtless give a higher mortality than the average, the gravest cases having been recorded."

The analysis of this argument appears to amount to this:

(1) In extreme cases, the head does present antero-posteriorly, and not as described by Champneys.

The mechanism, described by him, and deduced from an analysis of all the recorded cases which he could find, differed from this because the cases recorded are not extreme enough.

(2) The recorded cases are the extreme, and do not represent the usual mechanism.

(3) Therefore the cases on which Champneys founded his description of the mechanism are both not extreme enough and, at the same time, too extreme.

Since I wrote this paper I have had the opportunity of carefully observing another labour in the same patient, and the course of it is detailed below. The measurements as far as regards the patient are not repeated, as they are, of course, the same.

Present pregnancy.—The last menstruation was from May 26th to 29th, 1884, in all respects as usual; the fœtal movements were felt when the patient was four months gone in pregnancy. She had no special symptoms during her pregnancy except that for two or three months before admission (*i. e.* during the fifth, sixth, and seventh months of pregnancy) she slept badly.

State on admission.—She was admitted on January 22nd, 1885, for the induction of premature labour, the general conditions being the same as on the previous occasion. The house physician noted that small fœtal parts were very plainly felt over the whole of the front of the abdomen, the movements being very distinct; the fœtal heart was heard in the upper segment of the uterus on the left side.

Induction of premature labour.—On January 23rd, or at the beginning of the thirty-fifth week, labour was induced under the antiseptic precautions in use at the hospital.

At 4 p.m. a vaginal douche of corrosive sublimate at a temperature of 110° F. was given at a height of ten feet.

At 4.30 p.m. a solid celluloid bougie (No. 10) was inserted in the right anterior quarter of the uterus. No bleeding followed. The cervix was fairly patulous, and

was high up, being just reached by the tip of the index finger.

At 5.30 p.m. the douche was repeated.

At 6.30 the patient vomited watery fluid.

At 9 p.m. slight abdominal aching. The douche was repeated, after which the pains grew stronger and were felt in the bottom of the back.

The pains continued and prevented sleep in spite of bromide and chloral.

January 24th.—At 2 a.m. the cervix was the size of a florin, and a large bag of waters was forming.

At 3.30 a.m. the pains were long and recurred every two or three minutes, the intervals becoming shorter; the membranes protruded in a large bag filling the vagina, and a slight movement ruptured them, a large quantity of liquor amnii escaping. After this the pains decreased in strength and frequency, one in every four to six minutes.

At 3.45 a.m. the cervix was rather far back, very soft, canal three quarters of an inch long, os internum the size of a florin; a suture could just be reached, but the position of the head could not be determined.

At 5 a.m. there was full dilatation, the pains had increased since 4.30, and had become stronger and more frequent. The head descended rapidly, well flexed, with the occiput to the left, a caput succedaneum forming in the region of the small fontanelle.

At 5.15 a.m. the pains were much stronger, the spines of the ischium felt to be very prominent and the head to be resting on them. As the axis of the uterus was parallel to the plane of the brim, a binder was put on to rectify the pendulous belly.

At 5.45 a.m. the head appeared to be fixed between the ischial spines, and almost to reach the tuberosities. There was a large space in front of the head and behind the pubes.

At 6.15 a.m. I arrived and took charge of the case. The great fontanelle could be felt exactly opposite to, and a little above, the spine of the right ischium. The small

fontanelle was the presenting part, and the sagittal suture ran transversely. The spines of the ischia presented an obstacle to the head on both sides behind, but the head was beginning to press on the inner side of each tuber ischii. There appeared to be no biparietal obliquity either way.

At 7 a.m. the right ischial spine was pressing against the sagittal suture a little posterior to the great fontanelle. The direction of the sagittal suture was now a little towards the left oblique diameter, past the transverse. The left ischial spine impinged against the occipital bone a little anterior to the left limb of the lambdoid suture. The head was much lower, the small fontanelle being still the presenting part. The points of pressure were—the right ischial spine, the body of the right ischium, both ischio-pubic rami (leaving a large space between the pubes in front free from pressure), and, during a pain, the coccyx behind. The fœtal heart could not be heard. A considerable quantity of liquor amnii was still present.

At 7.30 a.m., during the pains, the head was bearing very strongly on both tubera ischii and projected below their level, pressing on the coccyx even during the intervals ; the finger was pressed on being passed between the head and perineum. Pains less frequent and strong.

At 9 a.m., no further progress having been made and well-marked œdema of the vulva having set in, the patient was put under chloroform, but not deeply.

At 9.20, Tarnier's forceps was applied, and with very little force the head was delivered. The mechanism of its delivery was as follows: The occiput at first rotated backwards, but as soon as the head began to distend the perineum, forward rotation occurred, and the head was born as an ordinary first position, but it emerged from the ligamentous pelvis very far back, and distended the perineum excessively. The shoulders also rotated at first posteriorly towards the *right* oblique diameter.

The child was born at 9.30 a.m., and was much cyanosed,

but immediately began to gasp, and at 9.40 to breathe rhythmically and regularly.

No laceration could be found in the vagina or perineum.

Caput succedaneum.—The centre was over the right parietal eminence.

Marks of the forceps.—The mark of the upper blade was seen to pass down the middle line of the forehead, over the bridge of the nose and under the right eye. The lower blade embraced the left ear, and its point reached just below the angle of the left ear.

Marks of bony canal on child's head.—No injury could be found due to the pressure of the spines of the ischia.

Moulding of the fœtal head.—Vertical shear.—The left parietal bone overlapped the right. The left frontal overlapped the right. The occipital bone was depressed beneath the parietals.

The right parietal bone was flattened, the left protuberant.

Lateral shear.—There was no considerable lateral (antero-posterior) shear ; both frontal bones seemed fairly on a level as viewed from above.

The moulding points plainly to relative increase of pressure in front, and relative diminution behind.

The child died two hours after birth.

Autopsy.—On removing the scalp a quantity of extravasated blood was found permeating its tissues ; that part of the cranium which had been pressed by the upper blade of the forceps had on its surface a blood-stained jelly-like mass ; corresponding to the lower blade was a deep discolouration, more marked than at the other parts of the cranium not pressed by the forceps. On opening the dura mater the brain was much congested, a small quantity of extravasated blood existed over the left temporo-sphenoidal lobe ; a few spots of extravasated blood in both lateral ventricles.

Lungs small and retracted, congested, only a few air-vesicles expanded ; a piece cut off sank readily in water.

Heart, right side contained much clot.

Liver, dark in colour, much blood flowed out on slight pressure.

Dimensions of fœtal skull.

Biparietal	3⅝ in.
Bitemporal	3¼ „
Fronto-occipital	4⅛ „
Mento-occipital	5 „
Suboccipito-bregmatic	3⅛ „
Suboccipito-frontal	3⅝ „
Circumference, fronto-occipital	13 „
„ suboccipito-bregmatic	12 „
Length of sagittal suture	3½ „

Length of child = 20 in.
Width of child = 5 lbs. 15 oz.

Course of lying-in.—The patient became maniacal on the eighth day, and was removed to Lambeth Infirmary.

The temperature after delivery never rose above 99·6° F.

Remarks.—The course of this labour abundantly confirmed the statements made in my former paper.

The head, presented in the first position, descended, well flexed, into the pelvic cavity, the sagittal suture became more transverse, the head passed out of the ligamentous pelvis unusually far back, between the ischial spines and ischio-pubic rami in front and the sacrum and coccyx behind, and, under slight traction by Tarnier's forceps (which I used in order to leave the mechanism undisturbed and which was applied obliquely), the occiput rotated posteriorly; but as soon as the head was clear of the pelvis it rotated forwards, and was born over the perineum as an ordinary first vertex case; the shoulders rotated posteriorly, nearly into the right oblique diameter, the same as that originally occupied by the sagittal suture.

The moulding of the head showed plainly that there was relative increase of pressure in front and relative diminution behind.

The following case has also been related by Schauta.

Schauta's case was briefly as follows:

The pelvis was somewhat "obtecta."

Labour came on at full time, the child presented transversely, the head towards the right side, the back in front. External cephalic version was performed, and the head passed the *lumbo-pubic* strait as a brow-presentation.

At the brim it presented with the occiput to the right and the *sagittal suture transverse;* in the cavity the occiput pointed towards the right sacro-iliac joint, and eventually the occiput pointed quite posteriorly (*posterior rotation*).

At the outlet forceps was applied, and the head was born without any forward rotation, with the occiput backwards.

The moulding of the head showed the occipital and frontal bones pushed (as usual) beneath the parietals. The caput succedaneum had formed on the posterior parts of the parietals and the occipital bone, especially on the left.

The child (female) weighed 2700 grams and was 49 cm. long.

The dimensions of its head were:

Antero-posterior (fronto-occipital) .	11 cm.
Small oblique (suboccipito-bregmatic)	9½ ,,
Great ,, (occipito-mental) .	13 ,,
Anterior transverse (bitemporal) .	8 ,,
Posterior ,, (biparietal) .	9 ,,

The bones were very soft.

The child died three days after delivery, from atelectasis pulmonum.

The mother had a severe attack of perimetritis, but eventually recovered.

Schauta's case thus again confirms my views.

At the brim, or near it, the head was nearly transverse, the occiput rotated posteriorly and did not rotate forwards over the perineum; perhaps owing to the hold of the forceps, which is not specified to have been Tarnier's.

Dr. Herman also has observed a case of delivery in a kyphotic pelvis.

His case is as follows:

The patient was aged thirty-eight, pregnant for the second time; the first child had been born dead without assistance at about eight months.

Labour began on May 17th, about 6 p.m. At about 1 p.m. (?) the os was fully dilated and the membranes were ruptured artificially, but as, in spite of strong pains, the head did not advance, Dr. Herman was sent for. He found lumbar kyphosis. The head seemed to be arrested at the brim in a state of extreme flexion, the posterior fontanelle being comparatively low down, the right limb of the lambdoid suture running to the middle of the symphysis pubis (first position). The sagittal suture ran backwards and slightly to the right, dividing the presenting part of the head into two apparently equal halves. The anterior fontanelle was out of reach.

The forceps was applied and failed, and delivery was performed by craniotomy and cephalotripsy. The right blade of the cephalotribe had seized the head above the right eye, the left behind the left ear.

Difficulty was experienced with the body. After freeing the anterior shoulder, the face rotated quickly through half a circle, bringing the face to the front, and then a quarter of a circle farther, so that the face looked towards the left thigh of the mother. This rotation was found to be due to relative shortness of the cord, which was tight and was twisted round the body of the child.

The brim, as measured by the hand after labour, was more than four inches across in the transverse and conjugate diameters. The outlet measured three and a half to three and a quarter inches in both diameters.

Dr. Herman remarks: "The present case bears out what would, *a priori*, have been expected (viz. that the head at the brim should present more antero-posteriorly than usual), and suggests that the published accounts contain, as collections of published cases often do, an undue

proportion of exceptional cases. The position of the head, as ascertained by examination, and as afterwards shown by the impressions of the blades of the cephalotribe, was rather nearer the antero-posterior position, and certainly not more transverse than usual. The head was also more flexed than is common, a condition which accounts for the cephalotribe having seized it above the eye."

Remarks.—I venture to think that this case cannot be taken to disprove any of my statements. The head presented in the first position, which it is quite at liberty to do,—it certainly is not described as being antero-posterior at the brim, or as approaching that position. The rest of the labour is no ground for argument, as cephalotripsy was performed and the cord was tight and wound round the child. I cannot even agree that an antero-posterior position at the brim " would, *a priori*, have been expected," if it is once remembered that even in this case, which was extreme enough to require cephalotripsy, the brim exceeded four inches in both conjugate and transverse diameters, which is sufficient for a full-sized head to pass, whose suboccipito-frontal diameter is four inches.

One other remark needs comment, viz. that the mechanism I have described is not the usual one, but the result of the recording of cases exceptionally severe.

I venture to think that this argument tells exactly in the contrary direction.

If the cases recorded are exceptionally severe, that is, the pelves are exceptionally deformed, that is, the transverse diameter of the brims is unusually and exceptionally small compared with the conjugate, *and yet* the head in these cases does not present antero-posteriorly but often more transversely than usual, it follows, *a fortiori*, that in the less severe cases there is *still less likelihood* of its being disturbed by the proportions of the brim.

I have not even been able to discover by whom the statement, which has been accepted and copied hitherto without question, was originated; and I can discover no cases in its favour, though I have now collected and analysed the course of thirty-five labours in twenty-two women.

Author.	Reference.	Presentation.	Change during labour.	Fœtal skull.		Pelvic outlet.		Operative measures.	Moulding of fœtal skull.	Result.	
				Bipar.	Bitemp.	Ant.-post.	Inter.-isch.			To child.	To mother.
Champneys	In this paper	Left occipito-iliac	Premature labour induced; deep transverse position; head passed out of ligamentous pelvis in right oblique diameter; much flexion early in labour; much pressure of head against sacrum and coccyx, posterior rotation, shoulders in same oblique diameter as head	9·5 cm.	8·5 cm.	9·5 cm.	5·5 cm.	Induction of premature labour forceps (Tarnier's)	Posterior parietal overlaps anterior; posterior side of head more convex, anterior side flattened	Born alive	Recovery
Schauta	Wien. med. Woch., 8. Sep., 1883, SS. 1085 and 1109	Right occipito-iliac	Pelvis somewhat "obtecta;" labour at full time; transverse presentation, head to right side dorso-anterior; external version, head passed *lumbo-pubic* strait as a "brow" presentation; at brim transverse, right occipito-iliac, complete posterior rotation in cavity	9 cm.	8 cm.	7 cm.	8 cm.	Forceps	Occipital and frontal bones beneath parietals	Born alive; died three days later of atelectasis pulmonum	„
Herman	Medical Times, Oct. 25th, 1884, p. 573	Left occipito-iliac	Extreme flexion at brim, occiput anterior (first position); cephalotripsy; complete posterior rotation due to relative shortness of cord	Perforation		9·5 cm.	9·5 cm.	Cephalotripsy	Cephalotripsy	Cephalotripsy	„

Dr. GALABIN said that he felt much complimented that Dr. Champneys had paid so much attention to the statement in his book on this subject to which Dr. Champneys had himself already made such valuable contributions. He did not think that in reality he differed so much as Dr. Champneys supposed. In saying that the head was often found to enter the brim obliquely or transversely, he meant that this happened more often than not. He did not therefore state or argue that the mechanism described by Dr. Champneys was incorrect; on the contrary, he was prepared to accept it as true for the majority of cases. He did not think that he could justly be impaled upon the dilemma upon which Dr. Champneys had so ingeniously tried to fix him. In Dr. Champneys' argument it was implied that in kyphosis a case of extreme distortion was identical with one in which the head would be likely to fit tightly in the brim, but this was not at all the case. What was the effect of kyphosis upon the brim? It was not to contract but to enlarge it. The reason of this he thought to be a point of some interest. He did not know whether it was generally stated, but he thought that it was not fully explained in Dr. Champneys' able criticism in a former paper of the mode of formation of the kyphotic pelvis. He was inclined to think that he must have overlooked it, if he held that the head was likely to fit tightly in the brim in a case of extreme kyphotic distortion. It was well known that a marked feature in the kyphotic pelvis was an over-action of the ilio-femoral ligaments, and that this over-action caused eversion of the upper part and inversion of the lower part of the innominate bones. This implied that the innominate bone was not simply bent but rotated to some extent as a whole, the rotation being allowed by gradual moulding under mechanical force of the articular surfaces. The axis of rotation must pass through the centres, or nearly through the centres, of the symphysis pubis and sacro-iliac synchondrosis. The point to which he wished to call attention was that the axis of rotation was below the level of the brim. There was therefore a plane of the pelvis, somewhat above its centre, the size of which was unaltered; all above this plane, and especially the brim, was enlarged; all below this plane, and especially the outlet, was contracted. Thus the transverse narrowing of the brim which would otherwise result from its change of shape, was to a great extent counteracted, and the size of the brim, as a whole, would be greater than normal. The only cases of kyphosis, therefore, in which the head was likely to fit tightly in the brim were not cases of extreme kyphotic deformity, but those in which kyphosis was combined with some cause of general contraction. Even if no cases could be adduced in which this occurred, he thought that his statement was, *a priori*, justified that in such a case the position of the head would adapt itself to the shape of the brim. But he thought that in some of the

recorded cases there seemed to be a tendency to such adaptations. In Dr. Herman's case, mentioned by Dr. Champneys, Dr. Herman considered the position of the sagittal suture to be more antero-posterior than usual; and he thought that the same thing was mentioned in some of the cases previously collected by Dr. Champneys. He had met with two cases of severe transverse contraction in which the position of the sagittal suture at the brim had been nearly antero-posterior. These were not instances of kyphosis but were more nearly allied to the Robert pelvis. He did not think that there was any ankylosis of the sacro-iliac joint but there was insufficient development of the sacrum. In both these cases, after cephalotripsy, the longest diameter of the crushed head rotated into a transverse position, and the fœtus was delivered entirely behind the ischial spines, the distance between which was less than two inches. This agreed with the mechanism described by Dr. Champneys as common in the kyphotic pelvis.

Dr. Herman said he accepted Dr. Champneys' conclusions, that in labour with kyphotic pelvis the head did not as a rule enter the brim in any different manner from the usual one. He had published another case of labour with kyphotic pelvis* beside the one quoted by Dr. Champneys; and in this the head entered the brim in the ordinary first position. But he was not convinced by Dr. Champneys' able criticisms that the comments he had made upon the cases quoted were incorrect, for in that case the head did enter the brim with its long axis nearer the antero-posterior diameter than usual. He still believed that, as Dr. Galabin had pointed out, in cases where there was such a relation between the size of the head and that of the pelvis as to make it necessary for the head to enter in the most favourable position, the long diameter of the head would generally turn into the long diameter of the pelvis, which in the kyphotic pelvis was the antero-posterior diameter. If the head was small enough with relation to the pelvis it might pass in any position. By exceptional cases he did not mean simply exceptional in the amount of pelvic deformity, but exceptional in some circumstance or other, and he thought the table in Dr. Champneys' first paper did contain a number of cases which were exceptional.

Dr. Champneys was glad to hear that Dr. Galabin agreed with him that the mechanism which he had described was the usual one. He thought, however, that no other inference could have been drawn from the passages in Dr. Galabin's book which he had quoted than that which he (Dr. Champneys) had ventured to draw. As regarded Dr. Galabin's description of the kyphotic pelvis, he thought that the question was not to be settled by any consideration of what might, *a priori*, have been expected from the

* 'British Med. Journal,' vol. i, 1886, p. 294.

shape of the brim (though even here he must say that he would not himself have expected the accepted mechanism) but by actual analysis of carefully observed cases. If from these cases it could be proved that he was wrong he would willingly own it. In the meanwhile he asserted, on the most trustworthy basis of fact, that what he had described was the correct mechanism, and that the formerly accepted mechanism was quite exceptional. He would refer Dr. Galabin to 'Obstetrical Transactions,' vol. xxiv, for 1882, pp. 242—253, and especially p. 253, paragraphs 3 and 4, where he would find the action of the ilio-femoral ligaments plainly set forth.

A CASE OF LUPOUS STRICTURE AND ATRESIA OF THE FEMALE URETHRA.

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(Reported by Mr. H. Parry.)

M. T—, æt. 48, admitted into the London Hospital May 20th, 1883.

Patient said she had always previously had good health. She had lived all her life in London, and done laundry work. She first menstruated at 14, had since been regular except during pregnancy, the flow being moderate in quantity, until the last twelve months, During the last twelve months the intervals had varied from three to six months. She had had one child, twenty-seven years ago, which was now living and well. For three months after her confinement she was ill with what was called "inflammation of the bowels." Ever since then her womb had seemed to her to come down; but she had not noticed anything protrude at the vulva.

Twelve years ago she went to St. Bartholomew's Hospital on account of trouble in making water, and of her womb coming down. An instrument was put in, which she wore for twelve months. She did not get better of the urinary trouble. After this she one night found herself unable to pass water, and came to the London Hospital, where this was relieved. She was there six weeks as an in-patient (under the care of the late Dr. Palfrey) and subsequently as out-patient. Has had two similar attacks since.

Some years ago she had an abscess in her right groin,

and about the same time underwent an operation at the Soho Hospital for Women, for the removal of some growth which caused trouble in passing water ; but she was unable to give any definite account of this illness.

The patient was again brought to the London Hospital at 4 a.m. on May 20th. She had not passed water since 3 p.m. on the previous day. She was in great pain, and the distended bladder reached to the umbilicus. The resident accoucheur tried to pass a catheter (without anæsthesia), but could not find the meatus, and therefore failed. The patient was put in a hot bath, and given a minim of croton oil, after which the bladder was spontaneously emptied, and the patient passed a comfortable night, free from pain. Temperature was normal.

On examination the next day, although a slit-like depression was seen in the situation of the meatus, no opening that would admit a catheter or probe could be discovered. Around the depression in the situation of the meatus were fibrous nodules like those of so-called lupus of the vulva ; and around these the mucous membrane was very vascular. The right labium minus was enlarged and thickened to about three times its normal size. The left labium minus was healthy except that there was a perforation in it. Some old scars in the right groin. Uterus retroverted, but otherwise normal. Slight chronic bronchitis, but nothing else abnormal discovered.

23rd.—Patient again unable to pass water. She was examined under anæsthesia by Dr. Herman. The urethra could be felt through the vagina distended into a sausage-like swelling. There was no opening at the meatus urinarius. A trocar was therefore inserted where the meatus should have been, and about two pints of urine drawn off. The urine was slightly acid, and contained some pus. The enlarged right labium was then cut off. The bladder was ordered to be washed out daily with a 1 per cent. carbolic acid solution, and the urine drawn off every six hours.

25th.—The patient is now able to pass water without an

instrument. In washing out the bladder No. 6 catheter has been used. As there seems some tendency for the opening to contract, bougies up to No. 12 were passed.

31st.—Patient discharged at her own request.

June 2nd.—Patient can still pass water, but says she has much soreness in doing so. The urine still contains pus.

July, 1886.—Patient has now no urinary trouble of any kind, but she declines to be examined.

The case above reported is one in which morbid changes were present like those which have been described under the title of lupus of the vulva. I have brought it forward because it exemplifies a rare event in the history of the disease. In his papers on lupus of the vulva, published in the last volume of the 'Obstetrical Transactions,' Dr. Matthews Duncan does not mention as within his experience either urethral stricture simply by fibrous growths at the meatus, or the possibility of the disease leading, not simply to stricture, but to absolute closure of the urethra. With regard to the urethra he says,* "I have not seen ulceration of the course of the urethra . . . except destructive ulceration." Lupous stricture of the urethra he has described as occurring in three forms,† first by the growth of lupous tissue around the canal, transforming it into a rigid cylinder; second, as a result of present inflammatory induration; and third, by a band of fibrous tissue.

In the case now recorded, none of these conditions was present, but first stricture from blocking of the meatus by lupous growths, and then atresia, presumably from the growing together of the ulcerated surfaces of these growths. Although no ulcerations were seen at the time the patient came under observation, yet it is difficult to account for the adhesion of the walls of the orifice in any other way. It is at first sight difficult to understand how in a few hours the adhesion of two ulcerated surfaces should

* P. 141. † P. 313.

be firm enough to withstand the pressure of the stream of urine and close the canal. It is probably only possible by the aid of the nodules of fibrous growth blocking the mouth of the canal, which make the passage between them small and tortuous, and protect the opposed surfaces ready to unite from the pressure of such a column of urine as the healthy urethra can contain.

It may be suggested that the operation which the patient mentioned was one which had produced cicatricial contraction, and that this was the cause of the stricture. But even assuming that a cicatrix was present, the lupous growths were the chief cause of the narrowing; and for a simple cicatrix several years old to suddenly, without other change, produce atresia, would be quite an anomalous morbid process.

A feature of the case which appears to me interesting, is the sausage-like dilatation of the urethra which was present when atresia had taken place, and which marked off the case clearly from stricture produced by general thickening of the urethra, and also from retention due to swelling of the urethra. It furnished the proof that the retention was actually due to the meatus being so blocked that the urine could not get out.

I have not seen, nor been able to find published, any case of an identical kind. But I find two cases in which stricture was produced by multiple fibrous growths about the meatus, the description of which suggests that they possibly should be classed along with the cases to which the term "lupus" has been applied. One is recorded by Goldschmidt.* The patient, æt. 35, had had syphilis six years before, and from this time urinary symptoms dated. The vulva was studded with many fibrous growths, from the size of a lentil to that of a coffee bean. A larger growth, the size of a hazel nut, appeared at first sight attached to the right labium minus, but on examination it was found to grow from the vagina, and the opening of the urethra was between it and the labium. The reporter attributed the

* 'Beiträge zur Geb. und Gyn.,' Berlin, 1874, Band iii, S. 10.

condition to syphilis. It was treated by dilatation of the urethra and removal of the tumours.

The other case is mentioned by Sir Henry Thompson.* The patient had suffered several times from retention during a period of some years, and had been relieved by the introduction of small catheters, and she habitually passed a small stream with difficulty. On examination it appeared impossible to discover the meatus by the eye. In the situation of the opening was a little bunch of pale, firm, corrugated, insensible excrescences, about the size of mustard seeds, or a little larger, among which, first a probe and then a No. 1 gum catheter, were passed with difficulty where the latter was tightly held. After relief had been afforded the woman was lost sight of. No obvious cause for the stricture had appeared on inquiry into her history. The able reporter of the case does not express an opinion as to the nature of the growths which narrowed the meatus.

Dr. ROUTH asked if in this so-called lupus case any histological examination had been made of the specimen?

Dr. HORROCKS asked if there was a history of syphilis, because the description of the case suggested its syphilitic nature. Dr. Matthews Duncan, when using the term lupus, did not mean either the lupus vulgaris, so common on the face, nor syphilis, with a lesion simulating lupus, but something quite different clinically and histologically. Dr. Thin had confirmed the histological differences by careful microscopical examinations.

Dr. HERMAN (in reply) said that the outgrowths removed had not been microscopically examined. He had carefully inquired into the possibility of syphilis and had given in the paper all the facts that he had been able to obtain. He thought it was unfortunate that the same term should be applied to this disease and also to the common lupus seen elsewhere; but he used the term "lupus" because it was already current.

* 'Stricture of the Urethra,' 4th edition, 1885, p. 232.

DECEMBER 1st, 1886.

JOHN B. POTTER, M.D., President, in the Chair.

Present—51 Fellows and 7 visitors.

Books were presented by Dr. Alloway, Dr. Braxton Hicks, Dr. W. L. Richardson, Dr. Wasseige, and the Medical and Chirurgical Faculty of the State of Maryland.

Frank Rushworth, M.B.Lond., William McMullen, L.K.Q.C.P., and Walter Essex Wynter, F.R.C.S., were admitted Fellows of the Society.

W. Percy Ashe, L.R.C.P.Lond. (Chislehurst) ; A. H. Freeland Barbour, M.D.Ed. (Edinburgh) ; Richard Broughton Bothamley, M.R.C.S. (Bromley) ; Robinson Boustead, M.D. (Brighton) ; Ambrose E. L. Charpentier, M.B.Dur. (Uxbridge) ; Arthur D. Roe, B.A., M.B.Cantab. (Wandsworth) ; Robert Sanderson, M.B.Oxon. (Brighton) ; Charles James West, L.R.C.P.Lond. (Streatham) ; and Charles Hoar, M.B. C.M.Aber. (Robertsbridge), were declared admitted.

The following gentlemen were proposed for election :— Alex. L. Achard, L.R.C.P. ; Henry Thomas Barton, L.S.A. ; Wm. Edwin Barton, L.R.C.P.Lond. (Hawkhurst) ; Robert Beswick, M.R.C.S. ; Charles Walter Biden, L.R.C.P.Lond. ; Adolphus Edward Bridger, M.D.Edin. ; Dudley W. Buxton, M.D.Lond. ; Alfred Goldney Chitty, L.R.C.P. ; Francis William Clark, L.R.C.P.Lond. (Croydon) ; Arthur Edward Dodson, L.R.C.P. and L.M.Ed. (Tooting) ; Bruce H. J.

Gardiner, L.R.C.P.Ed. (East Dulwich); Edwin Climson Greenwood, L.R.C.P.; Walter Herbert Haw, M.R.C.S.; Edwin Leonard Lees, M.B., C.M.Edin. (Bristol); Leonard P. Mark, L.R.C.P.Lond.; James Maughan, L.R.C.P.Lond.; George W. Moseley, M.B., C.M.Ed.; Horace H. C. Murray, M.R.C.S.; John Inglis Parsons, M.D.Dur.; Thomas Taylor, L.F.P.S.G.; Robert Whitby, M.R.C.S. (Harlesden); Charles Arthur Wigan, M.B.Dur. (Portishead); Robert Withers, M.R.C.S. (Otago); and Charles James Wright, M.R.C.S. (Leeds).

A DISSECTION OF THE MUSCLES OF THE FEMALE PELVIS AND PERINÆUM.

By Alban Doran.

This specimen was prepared, under my superintendence, by Mr. Pearson, the professional dissector to the Museum of the Royal College of Surgeons. It is a fine piece of dissection, and shows, as has repeatedly been shown before in respect to other parts of the body, how different is reality to ideas gained from systematic text-books. The specimen will be placed in the College Museum.

The right ischium and os pubis, part of the body of the left os pubis close to the symphysis, the right side of the coccyx, and about one inch of the adjacent right side of the sacrum, are the bony parts retained in this specimen. The bladder, vagina, and rectum have been cut short and turned a little to the left, so as to display the right levator ani muscle. The left levator ani has been cut away except close along its insertions. The integuments and deeper structures of the vulva have been drawn downwards from the pubic arch, the crura clitoridis being detached anteriorly from their bony origins. By this means, the relations of the pelvic to the perinæal muscles have been well displayed. Of necessity, on the other hand, a good

full-face view of the latter set of muscles could not be obtained.

I shall only describe those muscles which show well in this preparation. I have taken notes of the others in the course of the dissection, and hope shortly to exhibit another specimen prepared to show the perinæal muscles.

The *levator ani* is seen to arise on the right side from the posterior part of the body and horizontal ramus of the pubes (*pubo-coccygæus* muscle of Savage), and from the line of division of the pelvic fascia (*obturato-coccygæus* of Savage), but a portion of this last origin, and the whole of the origin from the spine of the ischium, is deficient. The *coccygæus* (*ischio-coccygæus* of Savage) is large, and arises, as usually described, from the spine of the ischium, and is inserted into the side of the coccyx and lower part of the sacrum. From the peculiarity above noted, there is a considerable gap between the posterior part of the origin of the levator ani and the origin of the coccygæus. This was the case on the left side as well.

The insertion of the posterior fibres of the levator ani into the side of the coccyx is well marked, and as the most posterior pass, direct from their origin, to the coccyx immediately below the insertion of the coccygæus, it is clear that no fibres have been cut away, for there would have been no place for their insertion.

The so-called tendinous arch, whence the obturato-coccygæus arises, is far less marked than would be supposed from the study of plates. This portion of the levator ani is inserted into a median fibrous raphe running from the coccyx to the posterior margin of the anus, as is taught at the schools. The more anterior fibres run at a very acute angle to the upper fibres of the sphincter ani, if not parallel to them, and are inserted into the side of the rectum.

The pubo-coccygæus runs by the side of the vagina and blends intimately with the posterior half of the upper border of the sphincter vaginæ, a small, slender muscle. This is an important point. A careful inspection of this insertion, as shown in this specimen, will show that the

greater part of what is often figured as the sphincter vaginæ is really the pubo-coccygæus portion of the levator ani. The error arises from the practice of examining the vulvar muscles from their perinæal aspect only, and not tracing carefully their relation to the pelvic muscles. Another source of fallacy is the common idea that the fibres of the levator ani descend vertically from the side of the pelvis on to the vagina, so that the dissector cannot understand how the (apparent) deep part of the sphincter can be a part of the levator ani. In reality the pubo-coccygæus lies almost parallel to the sphincter vaginæ, though on a higher and external plane. Hence, the dissector keeps on cleaning a sphincter-like muscle, regardless of relations to the layers of perinæal fascia, and at length displays what he believes to be a large sphincter vaginæ. More careful dissectors who avoid dissecting deeper than the bulb are surprised to find that the true sphincter vaginæ is really a very small muscle.

The origin of the *erector clitoridis* from the pubic arch is well marked, the muscular fibres are fairly developed, and arise from two heads, one anterior and a little internal to the other. It passes completely over the crus and some of its fibres join that structure, but its tendon of insertion is attached to the margin of the ramus of the pubes immediately below the symphysis. Hence, when this muscle acts, it must hold the crus down, like a tightened strap, and compress its veins.

The *dartos* of the labium was well developed in this specimen.

The levator ani needs a little further consideration. The two pubo-coccygæi when they contract must not only draw up the vagina, but must also compress it laterally. As the vagina is really a slit, with walls facing backwards and forwards, lateral compression must, of necessity, alter the direction of the slit, so that it faces the sides of the pelvis, and thus a right and left lateral wall, instead of the anterior and posterior wall of the quiescent vagina, are formed. The old question as to whether it closes the vaginal

canal or not, was based originally on a belief that the vagina when at rest was an almost cylindrical canal,* that is, on a false belief. When, however, anything occupies the vagina it is gripped laterally when the pubo-coccygæus contracts.

This may be proved in the out-patient room or in the wards of a hospital. The anterior fibres of the levator ani, that is, the pubo-coccygæus are very easily felt through the vaginal walls laterally. When thus detected, the patient should be directed to draw up the parts as after passing a motion. The contraction of the pubo-coccygæi then becomes very marked. In a subject suffering from fissure of the anus this contraction is often very strong. There is no doubt that the pubo-coccygæi also contract during orgasm; they tally with Marion Sims's constrictor vaginæ superior.

Budin† believes that the pubo-coccygaei may impede labour when they contract spasmodically. In one labour, a breech case, one of these muscles was torn, the child was born at once, and characteristic symptoms followed. In a second, described by Benicke, vaginismus had lasted for a long time, and the muscles had become permanently contracted, as has been noted by Cripps in stricture of the rectum. In a third, both of these contracted muscles had to be cut; the child was born, but the mother died in three days, and pus was found in the uterine sinuses and pelvic veins. When cut, the contracted muscles were believed to be cicatricial contractions.

I have repeatedly noted, in patients suffering from painful pelvic affections, that the muscles on the inner side of the pelvic wall keep in a state of tonic spasm, so as to simulate morbid deposit. This spasm generally disappears suddenly if the finger be retained for a few minutes in the vagina.

* This error is perpetuated in Luschka's celebrated drawing of the levator ani as the floor of the pelvis, reproduced in Zweifel's and in Hart and Barbour's text-books.

† 'Progrès Medical,' Tome ix, 1881, and Budin's 'Obstétrique et Gynécologie,' 1886.

CASE OF DICEPHALOUS MONSTROSITY.

By John Phillips, B.A., M.B. (Cantab.), M.R.C.P.

Dr. John Phillips showed a specimen of this abnormality. There were two separate heads and necks, two arms and legs. The body exhibited marked signs of its dual composition; it would therefore be classed under the head of Derodymus (Geoffroy St. Hilaire), or Dicephalus dibrachius (Ahlfeld). The mother had had five previous pregnancies, which were quite normal in character. Labour came on three weeks prematurely. The fœtus presented by the breech, and in the third position, the transverse pelvic axis lying in the left oblique diameter of the mother. As the body descended, no rotation of the right shoulder under the pubic symphysis took place. The left arm and shoulder passed over the junction of the left ischiatic and pubic ramus, the coccyx producing a well-marked linear depression between the double spines. With one prolonged pain the right shoulder was extruded in a corresponding position to its fellow, on the right side, the right head passed beneath the pubic symphysis and was immediately followed behind by the left head. The placenta was large and œdematous, the cord rather small. The greatest diameter of the two heads moulded upon each other was six and three quarter inches, measuring from the left parietal eminence on the left head to the right parietal eminence on the right head. A tracing of the heads was shown.

OVARIES AND TUBES FROM CASE OF PERSISTENT CHRONIC OVARITIS.

By J. D. Malcolm, M.B., C.M.

Mr. Malcolm showed ovaries and tubes for Mr. Knowsley Thornton, and read the following note by Mr. Thornton:

"These ovaries were removed, together with the tubes, from a married woman, æt. 32, a patient of Dr. Wyatt's, of Stamford Hill, on November 16th, and she has made an uninterrupted recovery. My reason for bringing them before the Society is that I think they show most typically certain conditions which are frequently present, not only in ovaries which have been the seats of chronic inflammation of long continuance, but also in the large ovaries so frequently found in association with fibromyoma uteri. Briefly, the condition is one of greatly increased activity in follicular development with coincident increase in the stroma and considerable thickening of the capsule. The ovary is found so full of follicles in full development that it presents almost the appearance of a small multilocular tumour. Besides these ripening follicles (many of which are so deeply seated that it is impossible for them to burst) there are corpora rubra and lutea in all stages of retrogression. This active condition is, I believe, due to the increased blood-supply, either through adhesions or through the enlargement of vessels which accompanies the growth of a big fibromyoma. The condition is admirably seen in the right ovary. In the left, a further stage has been reached; there are a few abortive follicles which have been affected by their situation deep in the stroma, an immense number of corpora lutea in all stages of decay, and a shrinking, hardening stroma and capsule. This is, in my opinion, the stage of most pain."

Mr. Malcolm said that the patient's history commenced with her married life ten years ago. Almost immediately after marriage she began to suffer from vaginal discharge, with bladder irritation and constant pain in the pelvis. During the first five years of her married life she had had four children and three abortions, and with each pregnancy she suffered from more pain, more discharge, and more weakness, the pain being always worst on the left side. Five years ago, a month after her last child was born, she had an attack of very

severe pelvic pain, and three months later she had a profuse flooding, which recurred every four to seven weeks, till the child was about a year old, when the pain and hæmorrhages moderated. Since then she had suffered from constant pain and floodings whenever she attempted to take exercise or attend to her household duties. She had seen many physicians, and every kind of local treatment had only led to exacerbation of symptoms. The removal of the ovaries was therefore determined on. In answer to a question by the President, Mr. Malcolm said that the operation was performed on account of the constant pain and tendency to floodings, and the exacerbation of these symptoms whenever the patient attempted to walk or take any kind of exercise, and in answer to Dr. Graily Hewitt, he said that the ovaries were covered by adhesions and the tubes were curled forward and adherent in front of the broad ligaments, with the ovaries wrapped up in them, which Mr. Thornton considered a rare condition, and that the uterus was normal, with the exception of a slight anteflexion.

Dr. MATTHEWS DUNCAN wished, as this case of oöphorectomy passed, to remark that he had much experience in such operations, and regarded them as among the most unsatisfactory. He would not at present say more on the subject.

ON MERCURIALISM IN LYING-IN WOMEN UNDERGOING SUBLIMATE IRRIGATION.

By William Radford Dakin, M.D., B.S.,
PHYSICIAN TO THE ROYAL HOSPITAL FOR CHILDREN AND WOMEN.

In the following paper an account will be given of the symptoms observed in several cases of mercurial poisoning, with the post-mortem appearances in one; and a comparison made of the results obtained from somewhat different modes of using corrosive sublimate as a douche.

Since this drug was first used by Tarnier at the Maternité in 1882, and afterwards by Toporski at Breslau, and by others, the mortality and morbility in lying-in hospitals have diminished in a marked degree, even when compared with the results obtained during the employment of other antiseptics, and corrosive sublimate is now looked upon as the most trustworthy antiseptic known. Like other efficient agents of this sort, however, it has its dangers, and seven or eight deaths which could be undoubtedly ascribed to its use during the puerperium had been reported up to July of last year (1885). Since then there have been others. The first one occurred in the practice of Stadtfeldt, of Copenhagen, who became a strong opponent of its use, unless under exceptional circumstances and in very dilute solution. Several other authorities have since followed his lead.

1. Stadtfeldt. Death occurred after a single interuterine irrigation of 1—1500 administered five days after labour. Carbolic injection (3 per cent.) had been used after manual extraction of the placenta, but had not affected the temperature, which was feverish. Patient was seized

with alarming symptoms during the douche, from which she recovered slightly afterwards. She died on the eleventh day, after displaying all the signs of mercurialism, and the diagnosis was confirmed by post-mortem examination. The changes in the kidneys and intestines were well marked ('Centr. f. Gyn.,' No. 7, 1884). Von Herff ('Arch. f. Gyn.,' Bd. xxv, Heft 3) considers that in this case the symptoms were caused by direct entry of the poison into the circulation through the open mouth of a vessel, and that shock is the explanation of the immediate occurrence of pain, &c.

2. Lomer records a case in which vaginal (probably, though he does not mention whether vaginal or intra-uterine) injection of 1—1000 was used, in which he had to sew up the perinæum, and in which a necrotic condition of the mucous membrane of the large intestine was found, and some inflammation of the small one. The kidneys are not alluded to ('Centr. f. Gyn.,' No. 14, 1884).

3. Winter showed the organs of a patient in whose case death had occurred on the fourth day. There was some post-partum hæmorrhage, and four to five litres of 1—1000 solution were injected into the uterus. The perinæum was torn, and was stitched up, the vagina being douched with 1—1000. This patient suffered from the usual symptoms, and post-mortem gangrenous colitis, and some peritoneal exudations were found. Kidneys again not mentioned, but the urine, which before delivery showed signs of slight nephritis, was after irrigation highly albuminous, and contained some blood ('Centr. f. Gyn.,' No. 28, 1884).

4. Vöhtz irrigated a patient's uterus after an abortion at three months with 1—750. The woman complained of sudden pain during the irrigation, and vomiting occurred after twelve hours. The usual signs appeared, with albuminuria, and ulcers were to be felt per rectum. Death on eleventh day. No post-mortem ('Centr. f. Gyn.,' No. 31, 1884).

Von Herff (loc. cit.) remarks that in this case the solution must have reached the abdominal cavity through the

Fallopian tubes, which would probably be more patent than normal.

5. Partridge ('New York Medical Journal,' p. 711, 1884) had a death after two intra-uterine irrigations of 1—2000. In this case dysenteric, symptoms and post-mortem, colitis were the most striking signs.

6. Thorn, of Halle ('Samm. kl. Vortr.,' No. 250) had two fatal cases, one after intra-uterine douching with 1—1000, of a patient in whom a missed abortion of three months ended in the expulsion of the ovum at the sixth month;

7. And one in a patient who had a flattened (rickety) pelvis, and on whom forceps were used. In this last case the vagina only was once douched with 1—1000. Two hours after delivery diarrhœa and other signs of mercurialism appeared. Patient died on the tenth day, having suffered from dysentery, and towards the end from stercoraceous vomiting. Urine not examined. Post-mortem, inflammation of large and small intestine, especially of the former, and marked parenchymatous nephritis. A small piece of placenta was found adherent.

8. Ziegenspeck records a death ('Centr. f. Gyn.,' No. 34, 1886) on the thirteenth day, after three injections of four litres, 1—5000, the first vaginal, on the first day, the second intra-uterine, on the fourth. These caused no symptoms. On the eighth day a second intra-uterine douche was given, and during this the patient suddenly complained of pain in the abdomen. She had the usual signs, and died on the fifth day after. This was a case like Vöhtz's. Post-mortem, the specific lesions were discovered. Z. thinks the cause was impeded outflow. Urine not examined.

9. Netzel (Stockholm) ('Nord Med. Arkiv,' Bd. xvii, Heft 2) mentions the case of a primipara whose vagina was douched twice daily for the first seven days with 1—3000. She had slight feverish symptoms on the seventh day, and an intra-uterine douche of 1—1500 was administered, causing some abdominal pain at the time. She

went through the usual course, and died on the twenty-second day, fourteen days after the intra-uterine irrigation. In addition to the usual lesions he discovered lime-salts in the kidneys. The urine, which was much diminished in quantity, contained mercury and albumen and casts (epithelial and waxy).

10. Gustav Braun ('Wien. med. Wochenschrift,' Nos. 21—24, 1886) lost a patient from mercurial poisoning. She was a primipara, and was douched during the first stage. After the placenta was expelled she had an intra-uterine irrigation of two litres of 1—1000. Episiotomy had been performed. She had diarrhœa on the third day. On the sixth she was fairly well, except for her diarrhœa, but on the evening of the seventh she became collapsed, and died soon after. She had opium in twenty-minim doses. The post-mortem signs were the usual ones, and she had two litres of yellowish-brown fluid containing fibrin in the peritoneal cavity.

11. Hoffmeier ('Ann. de Gyn.,' T. xxii, p. 155, 1884) lost a patient after a douche of 1—1000. Complete rupture of the perinæum. Death on sixth day. Symptoms and post-mortem appearances as in the others.

Other fatal cases have occurred during treatment after abdominal operations.

Many non-fatal cases of poisoning are noticed, with the usual symptoms, like those which will be described later.

It was found by Keller, of Bern ('Archiv f. Gyn.,' B. xxvi, Heft 1), that traces of mercury are present in most cases in the urine after douching with a 1—1000 or 1—2000 solution. This occurred more frequently in intra-uterine douching than in vaginal (only in one case of the latter). He also found that the mercury was in all cases accompanied by albumen. His methods—three—are given at full length in his article, and consist in the main of combining the mercury present with some other metal, as zinc, and heating the result in a bulb with a fine tube, on the inner surface of which a mirror is formed. He

found mercury in thirteen cases out of eighteen. He took every precaution against the accidental entry of mercury into the urine.

He considers mercurial irrigation dangerous when the kidneys are not perfectly sound.

Von Herff withholds it also in anæmia, atony of uterus, and in cases which have been previously treated with mercury, considering the last class more susceptible to the drug when its use is renewed than patients who have never taken it in any way (loc. cit. ant.; and Stenger 'Centr. f. Gyn.,' No. 13, 1884).

Out of 170 cases admitted during a part of the last twelve months into the General Lying-in Hospital, some under the care of Dr. John Williams, and some under Dr. Champneys, who have very kindly allowed me to make use of them, fourteen cases which were undoubtedly mercurial have occurred.

It is a noteworthy fact that although exactly the same system and details were carried out since corrosive sublimate was first used at the hospital in May, 1884, only two or three mild cases of poisoning had occurred up to September, 1885. Since then to the present date only about half a dozen cases have occurred. Excepting in one case, which was fatal, the symptoms in all the cases forming the text of this paper were nearly identical, and the patients were well by the twelfth day of lying-in.

Method of use.—This at present (*i. e.* spring of 1886) is as follows:*—A solution of 1—200 is kept in the labour- and lying-in wards, for dilution. The hands and non-metallic instruments are disinfected by a solution of 1—1000.

In the labour-wards, before and immediately after delivery the vagina is douched with two quarts of 1—2000, the post-partum one being at a temperature of 115°—120° Fahr. The douche before delivery, being mainly, though not altogether, for the benefit of the

* It has since been altered.

child's eyes, is repeated if the first stage be abnormally long.

No doubt the solution immediately after delivery has access to the uterine cavity as far as any such exists, but no intra-uterine tube is used. This solution contains approximately $\frac{1}{3}$th grain of perchloride to the ounce, and so sixteen grains in the total douche.

At present, during the time, usually fourteen days, that the patient remains in hospital, she is for the first two days douched twice a day with nearly three pints of 1—2000 at 110° Fahr.; after the first two days with 1—4000.

The douche is administered in the dorsal position so as to increase the intra-abdominal pressure, and the uterus is firmly compressed during the process, and for a few minutes afterwards, to assist in evacuation of the fluid. The woman is then made to get up on to her hands and knees and pass water, and then to empty the vagina as thoroughly as possible. The retention of one or possibly two ounces of the solution, if the mercury in it were absorbed, would mean the possible admission into the system of $\frac{1}{3}$th or $\frac{2}{3}$th grain of perchloride—quite enough to cause unpleasant symptoms if repeated at short intervals, in addition to the quantity absorbed from the solution as it flows over the surfaces.

Differing susceptibility among patients.—Not much light can be thrown upon this by the present cases.

1. *Condition of kidneys.*—In all the cases the kidneys were healthy on admission, the urine (catheter) being carefully tested. I should say that in a small percentage of the total cases admitted albumen was present on the first day after delivery, but this was the case in only one of the patients who were subsequently poisoned, all the others passing perfectly normal urine till they were affected. Sugar, of course, was present in a great number.

2. *Amount of laceration.*—Von Herff attaches some importance to this. In twelve of the fourteen cases the perinæum was intact, and in none did the laceration of the

cervix, if any were present, reach the vaginal reflection.

3. *Parity.*—Six women were 1-paræ, four were 2-paræ, and the rest (four) had had from three to seven children. This proportion may seem to indicate that patients were more liable in their earlier confinements, but these numbers represent about the usual relation of primiparæ to the total number admitted. This being so, the existence of *laceration* (of the perinæum at all events) does not seem to increase the liability to poisoning, it being borne in mind that primiparæ must of necessity, as a rule, be a great deal more torn than multiparæ. The contrary view is rather supported, viz. that an intact perinæum, if it quickly recover its tone, or its muscles are made to act in closing the vaginal orifice by any stimulus, will be a powerful aid to the entrance of mercury into the system.

Von Herff (loc. cit. ant.) has proved experimentally that sublimate solution has a very strong influence in occluding the vaginal orifice, and it acts by stimulating the sphincter vaginæ and levator ani muscles. He found that they were strong enough to cause "balloon-like" distension of the vagina when the douche-tin was raised three feet above the patient. The effect on the muscles lasted a quarter of an hour.

In a patient in the hospital, retention of more than two ounces of the douche occurred, lasting four hours, and causing no symptoms. It was finally discharged on her moving in bed.

4. *Idiosyncrasy.*—This seems to play the most important part in deciding whether a patient shall be affected or not, as is the case with so many other powerful drugs.

5. Anæmia was present in a marked degree in one woman, but she was by no means the only anæmic patient subjected to the same treatment.

6. One patient had previously been under mercurial treatment, and this was the only case in which I could obtain such a history.

Date of first symptoms.—The symptoms of poisoning, in every case in which they appeared, did so not earlier than the fourth day, or later than the seventh.

In all cases but one the mercury was at once stopped, and Condy's fluid or carbolic acid substituted on the appearance of any diarrhœa, but in spite of this, sufficient other special signs of mercurialism appeared during the following days to confirm the diagnosis.

During the use of sublimate douches, therefore, any diarrhœa which cannot be accounted for in another way should be considered a sufficient cause for suspension of the drug. In many cases the diarrhœa has first showed itself after the administration of a purge, and has then gone on with other signs of mercury.

The symptoms of poisoning were very constant (see Table).

Diarrhœa.—This occurred in every case but one. It was preceded or not by abdominal pain, but was accompanied by no tenderness on pressure.* The stools were at first of normal character, the consistence alone being altered, and in all the cases but three they remained so till the effect of the drug ceased. In these three they became slightly dysenteric, at times being of a general pink colour, and at others simply streaked with blood. In two of the cases there was some tenesmus.

Vomiting occurred in less than half (five), and nausea in one case, without having any relation to the severity of the other signs.

The *tongue* had a fairly constant appearance. The thickened epithelium was detached in irregular spaces, causing a well-contrasted red and white aspect.

Thirst and loss of appetite were generally present.

Fœtor of breath was always well marked and unmistakeable.

Marked *salivation* was only present in one case.

Tenderness of mouth and gums was observed as a rule,

* In Netzel's case this symptom was present. Post-mortem there was peritonitis.

and in three cases *ulcers* appeared on the inner aspect of the cheek, opposite a sharp tooth. *Hæmorrhage* from the *gums* occurred in one case.

Loosening of the teeth occurred in two cases.

A red line on the gums was always present, generally very distinct and differentiated. No blue line was seen. (A redness and slight sponginess of the gums existed in a large proportion on admission, owing to defective cleanliness, but this had a diffuse, ill-defined appearance.)

Slight eczema of the thighs occurred in one case; and eczema of the anterior abdominal wall, strictly limited to the skin over the striæ, occurred in another. Lessona ('Annali di Ostetricia,' November and December, 1884, abstracted in 'Centr. f. Gyn.,' No. 34, 1885) describes an erythema beginning about the breasts in three of his cases, preceding or following salivation. Five or six patients under my observation had a similar rash, which became general, and assumed various appearances, scarlatinal, measly, &c., but none of them showed any signs of mercurialism. As erythemata, generally scarlatiniform, are extremely common in puerperal women, Lessona's cases were probably only a coincidence.

Albuminuria.—The urine in eleven of the cases contained a trace of albumen, about the eighth day as a rule, lasting one or two days, and then disappearing. This was two or three days after the douche was stopped.

I only tested for mercury in two cases, and did not find it. I used potassium iodide, which gave no precipitate. I have since found mercury in all cases in which douches have been used, even for one day only, and have employed a different method, viz. digesting the urine with copper turnings and hydrochloric acid, and then subliming in a glass tube. It is fairly easy in all cases to get metallic globules visible under a 1 in. power by scraping the tube with a match. In these cases there is not enough mercury to give a precipitate with pot. iod.

In unaffected cases (and in some already poisoned) nitric acid in the cold gives no precipitate as a rule, nor

does picric acid, nor ferrocyanide of potassium and acetic acid.

Probably the mercury combines with any albumen excreted, at the moment the two substances find themselves outside the circulation. This albumen would not be recognised, but the mercury with which it combined would be dissociated by the action of the copper. I suggest this because of Keller's statement; he always found albumen where he found mercury. His cases had intra-uterine douches with few exceptions; mine were all vaginal only.

I will not trouble the Society with the details of all the cases, but will select two: one a typical specimen of the milder form, and the other the case in which death occurred, and an autopsy was made. The symptoms and dates of their appearance in all the affected cases will be found in a Table at the end.

Case 1.—Primipara, æt. 28 (No. 13 in Table). Perinæum torn for ¼ in., cervix slightly fissured to right, left, and posteriorly. Had scarlatina when a child. No œdema during pregnancy. Urine normal on admission. Well till 6th day, when she had some diarrhœa; bowels open five times; no pain, no sickness, or nausea. Well-marked red line; tongue furred in patches; breath foul. Douche stopped. Condy's fluid used instead. On the 7th, 8th, and 9th days her symptoms were the same, the bowels being open ten times in the three days.

On the 10th day, the diarrhœa ceased, and the other symptoms disappeared by the 12th day, except the red line on the gums, which remained on dismissal.

Trace of albumen 8th day only, on standing. Milk and child unaffected. Mean temperature 98·8°; highest temp. 99·8°. Fundus at brim on 8th day. Lochia ceased on 11th day.

Case 2.—3-para, æt. 28 (No. 1 in Table). Perinæum intact. Cervix not deeply torn, os transverse. Had scarlatina when a child. Has always been in good health.

Had some œdema of her legs during whole period of pregnancy. Urine normal up to 5th day. Contained a fair quantity (⅛th) albumen on 16th day (morning of death).

On 6th day, suffered from slight abdominal pain, and passed per vaginam six or seven ounces of blood-stained mucus. Ordered ergot ʒj, ter die. Bowels open nine times.

On 7th day, intestinal pain reappeared. She passed several more ounces of the same fluid per vaginam, and felt better. She was sick, the vomit being very bilious. No tenderness of abdomen. Bowels open four times.

8th day.—Feels well. Mouth and breath rather foul. Bowels open five times. *Mercurial douche stopped.*

9th day.—Gums tender, breath foul, tongue feels swollen and sore. Some salivation, and one or two of the teeth are loose. No abdominal pain, tenesmus, or dysentery. Bowels open five times. Ordered Tr. Opii ♏v, Tr. Ferri Perchlor. ♏viij, Glycerin ʒj, Ex. Aq. ℥j, 4tis horis, and Pot. Chlor. (solid) to suck.

10th day.—Condition much the same. Bowels open once.

11th day.—Mouth as before, tongue more foul, and greyish in places, some bleeding from the gums. Face about parotid region rather swollen. Bowels open five times.

12th day.—Mercurial symptoms in mouth subsiding somewhat. Motions rather pink. Bowels open three times. (The medicine was not given during the night, owing to a mistake.)

13th day.—Sick once in night. Bowels open six times. No dysentery or tenesmus.

14th day.—Milk diminishing. Some more hæmorrhage from the mouth this morning. Breath fœtid, tongue grey and dry. Pulse rather jerky. Temperature subnormal on the whole. Bowels open four times.

15th day.—Can speak and swallow better. Milk ceased. No diarrhœa. Opium discontinued 11 a.m., as there was a very slight tendency to drowsiness. This continued throughout the day, and she objected to being disturbed for her food and medicine. She was left alone till the following morning, and was sleeping quietly.

16th day.—Early this morning her breathing became stertorous, and the nurse could not rouse her. She was in a condition exactly like opium-poisoning, except that her pupils were not at all contracted. They were equal. She was easily roused by sprinking with cold water, but fell asleep again at once if left to herself. Pupils respond to light, about the size of a healthy person's on a dull day. She remained in this condition, easily kept awake, for five hours, when she began to get more drowsy, and could only be roused with difficulty. She became rather cyanosed, and her pulse intermitted occasionally from collapse of the anterior nares during inspiration, the pressure in her thorax becoming negative.

She died nine hours after the stertor began, becoming quite conscious for several minutes before her death, and recognising her husband and those around.

Post-mortem.—In this examination Dr. Boxall kindly assisted me.

The main changes were in the colon and kidneys, and there was a small clot in the arachnoid space.

Brain.—Dura mater abnormally adherent over a large area to calvarium, and to pia mater, especially in and around great longitudinal fissure. A recent clot the size of a five-shilling piece and ¼ inch thick in arachnoid space about the upper end of the parieto-occipital fissure of the right side, and on the upper surface of the hemisphere. Source of hæmorrhage not found. Vessels and brain-substance healthy.

Alimentary tract.—*Tonsils* both deeply ulcerated; on the mucous membrane of the mouth several shallow ulcers. *Œsophagus* healthy. *Stomach,* mucous membrane slightly red and congested here and there, no ulceration, recent or old. *Small intestine* healthy. Two small intussusceptions in ileum. *Large intestine,* all the summits of the folds intensely congested, black, and in places sloughing. Transverse colon most affected, rectum very slightly. *Peritoneum* healthy but for two firm recent adhesions, one the size of a crown-piece on the right margin of the

liver, and the other attaching the upper end of the spleen to the cardiac end of the stomach.

Kidneys.—Weight 7½ oz. each, pale, with a few red Malpighian bodies and congested stellate veins. No fatty change visible.

Lungs.—Some tubercle at both apices; some old adhesions in pleuræ.

All the other organs were normal.

None were examined for mercury. No mercury was found in Stadtfeldt's case, but this was hardly to be expected under the circumstances, viz. only one irrigation and the lapse of five days before death. None of the other fatal cases were investigated in this direction.

Histology of kidneys.

Malpighian tufts and capsules.—Slight increase of nuclei in the tufts; amorphous granular matter exuded into capsules, which were about double the normal thickness, and had in most cases lost their epithelial lining.

Vessels unaltered. *No hæmorrhages.*

Tubules in a condition of mixed acute, and chronic parenchymatous nephritis. Little, if any, fat. Numerous colloid casts, none fatty, and no blood. In the straight collecting tubes nearly all the epithelium was detached, and casts were extremely numerous.

Interstitial tissue about twice normal thickness, hyaline in appearance, very slightly fibrillated, containing numerous nuclei.

There were no calcareous deposits in any part of the kidneys. These have been found in the shape of nodules in the straight and convoluted tubules, and consisted of calcium carbonate, effervescing with sulphuric acid, and forming crystals of calcium sulphate. Salkowsky and Prevost found them in animals which had been experimentally poisoned, in from eighteen to twenty-eight hours after the exhibition of the mercury. The latter found a corresponding decalcification of the bones. Dahl ('Centr.

f. Gyn.,' No. 13, 1884, where also will be found the other two references) found the same deposit in the kidneys of a man who died after taking nitrate of mercury. He found similar deposits in Stadtfeldt's case already referred to. Netzel (l. c.) found them in his case.

The recorded autopsies in the cases referred to gave very similar results to mine, the main changes being in the intestines, particularly the colon, and the kidneys. In Thorn's, Winter's, and Ziegenspeck's cases only was there peritoneal exudation. In a case of Keller's ('Centr. f. Gyn.,' No. 32, 1885), where the uterus was excised by Müller's method per vaginam, no change was found in the kidneys, but he relies on the marked signs of inflammation in the ascending colon for confirmation of his diagnosis. There were one or two adherent hæmorrhages on the peritoneum, one very large, between the liver and diaphragm. The patient was extremely anæmic to begin with. Doléris ('Nouv. Arch. d'Obst. et de Gyn.,' 25 Avril, 1886) noticed slight punctiform ecchymoses in the brain, and Ziegenspeck found some in the pericardium and pleura.

The cases of poisoning which occurred in the hospital may be divided into two periods. In the first the douche was of the strength of 1—2000 throughout, and five cases occurred out of seventy-six treated (6·58 per cent.). In the second period the strength was 1—2000 for the first four days only and 1—4000 afterwards, and nine cases occurred out of sixty-seven (13·4 per cent.). I should say that the percentage in the first period is only that of the cases which were under my observation. It would be very much lowered if the whole number from the commencement of use of the sublimate were included.

Between these periods there is a group of twenty-seven cases in which 1—2000 was used in the labour-ward once only post partum, and 1—4000 throughout afterwards. In this series there was no case of poisoning. Unfortunately, however, a death occurred from pyæmia, the only septic case fatal during the year. It is a question whether

this occurrence should be considered as showing that 1—4000 is untrustworthy, or that absolute asepticism is unattainable in lying-in women. Were it not for this death this last-mentioned period contrasts very favourably as regards average mean temperature, average highest temperature, uterine involution and duration of lochia, with the other two groups.

1st group (1—2000 throughout).—Average mean temp. 99·14°; average highest temp. 100·8°; day fundus became level with brim 10th.

2nd group (1—2000 first four days, 1—4000 afterwards).—Average mean temp. 98·68°; average highest temp. 100·5°; day fundus level with brim 9·9th.

3rd group (1—4000 throughout).—Average mean temp. 98·7°; average highest temp. 99·5°; day fundus level with brim 9·4th.

It is impossible to make an exact average statement of the duration of the lochia, as some of the women went out with the discharge still existing, in almost all the cases this being due to idiosyncrasy, but the numbers are as follows:

1st group.—The average of 64 out of the 76 was 11 days (12 cases went out with lochia present).

2nd group.—Average of 62 out of 67 was 11·3 days (5 cases went out with discharge present).

3rd group.—Average of all 10·5 days. All ceased before dismissal.

Summarising the mercurial cases in the same way:—Average mean temp. 99·0°; average highest temp. 101·1°; fundus level with brim, 10·8th day. Lochia.—Average of 10 out of 14 was 11 days (4 went out with lochia present).

During the use of the douche as above described the dangerous period has, as far as all these cases go to show, expired at the end of the first week at latest, for there were no fewer cases poisoned when the strength was diminished on the fourth day than when the full strength was retained throughout.

In all cases the symptoms appeared not later than the seventh day.

The patient should therefore be very carefully watched during this time, and the mercury at once discontinued should any symptoms appear. After the seventh day there seems to be no risk.

It is seen that effects which could only be called slightly unpleasant arose if the douche were suspended immediately on the appearance of any suspicious symptom.

Owing to my being comparatively unprepared for mercurialism, the diarrhœa and pain in the fatal case did not immediately suggest the douche as the cause, and they went on for two days before the mercury was stopped.

This was done, however, immediately on the observation of foulness of breath and tenderness of mouth. To this persistence I attribute the result, but I think it need never happen again.

The cause of death was what I think may be called an accumulation of opium owing to defect in the means of elimination, viz. the kidneys, and this accounts for the gradual and insidious character of the symptoms, which appeared fifteen or sixteen hours after the last dose of ℥v Tr. Opii had been administered. She had ʒss per diem altogether for four days.

In Stadtfeldt, Vöhtz, and Thorn's cases the patients died in much the same way as my case, *i. e.* with fairly-marked symptoms of opium-poisoning. The two latter writers' cases were treated with opium, Thorn's with "large doses" (? quantity); Vöhtz, with opium suppositories, and Stadtfeldt says the patient had the "usual" drugs for diarrhœa and pain. His case also suffered from anuria the last two days, and he mentions uræmia as a possible cause of death. This also occurred to me as regards my own case, as some opium signs were wanting, and the condition much resembled the apoplectiform variety of uræmia. However, the fact of her having had opium, and the condition of the kidneys, account for everything more naturally, though the other hypothesis is quite tenable,

and indeed the opium would aid in the production of that state.

The treatment of these cases abroad seems to consist mainly in giving opium. Stenger ('Centr. f. Gyn.,' No. 13, 1884) mentions ℥xx as his dose of Tr. Opii.

If a patient's condition be such as to contra-indicate in no way the use of mercury as a douche, the most important matter, judging from Von Herff's experiments (loc. cit.), is to ensure complete emptying of the cavities after irrigation. The kneeling position is evidently not enough, as shown by the case observed of retention for some hours. As the perinæum (almost vertical in the dorsal position) probably forms the obstacle to free outflow, it must either be pressed down so as to be on a level with the posterior vaginal wall, or if it be torn and stitched and not fit to be pressed back, syphonisation, as recommended by Von Herff, is to be employed. Dr. Williams thought the glass nozzle of the douche-tube (a test-tube shaped nozzle, perforated at the closed end, and about four inches long), if left in the vagina for a few minutes, while the other movements were performed, would secure pretty complete drainage, and in fact a variable quantity does drain away through it. Dr. Champneys depresses the perinæum with the tube held in the hand, at the same time pressing the uterus down, at the end of irrigation.

Gustav Braun (loc. cit.) follows the mercurial douche with one of distilled water, without removing the tube. Von Herff says that the uterus will always empty itself, the sublimate acting as an energetic stimulant to its muscular fibres.

He never uses prophylactic injections at all in normal cases, and where he does use them (in cases where the hand has been inside the uterus, or when the ovum is macerated or decomposed, &c.) he only uses 1—5000 or 1—3000 at most. He gives a number of rules (loc. cit.) which he says, when followed, will ensure safety.

Winter ('Centr. f. Gyn.,' No. 43, 1884) has pretty much

the same opinion, and argues that if 1—5000 solution will kill anthrax bacilli, it is quite unnecessary to use a stronger solution against simple septic bacteria, which are not nearly so resistant. He finds that in the Berlin University Clinic, the number of septic cases is not increased when a solution of 1—5000 is used instead of 1—1000, or 1—2000, and no cases of poisoning have occurred.

These two authors seem to represent the general opinion on the Continent.

The probability is that it is exclusively during the first two or three days that the patient is most liable, under ordinary conditions, excluding post-puerperal affections, to both septic and mercurial poisoning. The symptoms may occur later, but this is the period in which the poison, of whatever description, is absorbed. White leg may, or may not, be an exception to this rule. I think it would be unwise, in lying-in hospitals, to lay down any rule as to whether irrigation is or is not absolutely necessary, but the results at the General Lying-in Hospital have been such as to make the physicians loth to dispense with it.

The difficulty is to hit upon the exact proportion of mercury which will ensure safety from sepsis, and not be too energetic and carry its action beyond this.

If it were not for the occurrence of the pyæmic case, the period of 1—4000 throughout was incomparably more successful than either of the others, and it is simply a matter of opinion whether this occurrence should be taken as a modifying circumstance or should be considered as inevitable regarded from the point of view of our present knowledge. It must also be remembered that no intra-uterine injections were used in this case, so that the 1—4000 hardly had fair play.

I think, therefore, as far as my experience goes, that 1—4000 is quite of sufficient strength for the first four days, used twice daily. After that, the strength may be diminished still further, or the douche used once daily. Immediately before and after labour the 1—2000 may still

be retained, all the precautions being strictly observed, and scrupulous disinfection of the hands of the physician, midwife, and all concerned being practised. In all cases the constant and unvarying stream obtained from a douche-tin raised about three feet above the patient should be used in preference to the more or less intermittent flow from a syringe.

In cases already infected, and for curative purposes, stronger solutions, 1—2000 or even 1—1000, may be admitted, either as vaginal or intra-uterine, but, of course, should always be administered with the greatest caution and by the physician himself.

Treatment.—In cases which are carefully watched, and the first symptoms observed and acted on, there is little need of treatment. Bismuth alone was quite satisfactory in its action, and cases, as far as my observations go, never require opium, which has proved itself a most dangerous drug in all the occasions on which it has been used, and nothing more or less could have been expected.

Cases like Stadtfeldt's and Vöhtz's are quite out of the ordinary run (*i. e.* symptoms appearing during the first douche), and treatment seems to have no effect whatever in such circumstances.

I append a table, with symptoms and their dates of appearance in all the cases, and a list of authors referred to, with the places where their contributions will be found.

It was suggested that I should look up the prevailing meteorological conditions during the period in each case, between labour and the first appearance of symptoms.

The state of the barometer seems to have had no constant relation, as does that of the thermometer, except that on four occasions it fell suddenly 7° to 8° the day before mercurialism showed itself.

The relation the wind's direction had was, however, well marked, and was more constant than can be ascribed to mere coincidence. During the several periods into which the several cases are congregated (in point of time), the wind was either prevailing west-south-west or south-

west; generally the latter. In the intervening free periods the wind was about the north, either north-west or north-east, perhaps going round to the east. This arrangement is rather marked in a case which was isolated by a month's free period on each side. In the month before, the wind was north-east or north-west; in the month after, it was east or north. During the period between the labour and appearance of symptoms it was due west.

It should be mentioned that there was a week of south-west in the beginning of October in which no case occurred.

A table of barometer, thermometer, and wind conditions is appended.

Stadtfeldt. Centr. für Gynäk., No. 7, 1884, and Centr. für Gynäk., No. 18, 1884.

Stenger. Centr. für Gynäk., No. 13, 1884.

Dahl. Centr. für Gynäk., No. 13, 1884.

Lomer. Centr. für Gynäk., No. 14, 1884.

Winter. Centr. für Gynäk., Nos. 28 and 43, 1884.

Vöhtz. Centr. für Gynäk., No. 31, 1884.

Partridge. New York Med. Journal, p. 711, 1884.

Thorn. Samml. klin. Vorträge, No. 250.

Keller. Archiv f. Gynäk., Band xxvi, Heft 1.

Lessona. Annali di Ostetricia, November, 1884 (abstracted in Centr. f. Gyn., No. 34, 1885).

Von Herff. Archiv für Gyn. Band xxv, Heft 3 (abstracted in Centr. f. Gyn., No. 48, 1885).

Doléris. Nouvelles Archives d'Obstét. et de Gyn., 25 Sep., 1886 (in Butte's article).

Ziegenspeck. Centr. f. Gynäk., No. 34, 1886.

Netzel (of Stockholm). Nord Med. Arkiv, Bd. xvii, Heft 2.

Braun (Gustav). Wien. med. Wochensch., Nos. 21—24, 1886.

Hoffmeier. Ann. de Gyn., T. xxii, p. 155, 1884.

Dates of appearance of Symptoms.

Case.	Foul breath.	Pain.	Diarrhœa.	Dysentery.	Vomiting.	Salivation.	Characteristic tongue.	Red line in gums.	Ulcers in mouth.	Teeth loose.	Albuminuria.	Result.
1	6th	6th	6th	12th (only)	7th and 13th	9th	7th	8th	9th	9th	$\frac{1}{6}$th (date ?)	Death 16th.
2	6th	—	6th	—	8th	—	?	6th	—	—	Trace $\frac{1}{8}$th, 7th–9th	Recovery 9th.
3	6th	—	—	—	—	—	Yes	Yes	Yes	Yes	Trace 7th and 8th	„ 12th.
4	6th	8th	4th	6th (only)	—	—	6th	6th	—	—	Trace 8th	„ 11th,
5	6th	8th	6th	7th (only)	—	—	6th	6th	8th	—	Trace 7th and 8th	„ 8th.
6	5th	4th	4th	—	5th	—	6th	5th	—	—	Trace 6th and 7th	„ 9th.
7	6th	8th	6th	—	9th	—	?	?	—	—	—	„ 11th.
8	7th	6th	7th	—	8th	—	8th	7th	—	—	—	„ 12th.
9	7th	9th	6th	—	6th	—	6th	—	—	—	$\frac{1}{8}$th, 7th–9th	„ 11th.
10	7th	—	7th	—	—	—	7th	—	—	—	Trace 8th	„ 11th.
11	6th	—	6th	—	Nausea 6th	—	7th	6th	—	—	Trace 7th and 8th	„ 12th.
12	5th	5th	5th	—	5th	—	5th	—	—	—	Trace 6th and 7th	„ 9th.
13	6th	—	6th	—	—	—	6th	6th	—	—	Trace 8th	„ 12th.
14	5th	7th	5th	—	—	—	5th	5th	—	—	—	„ 10th.

Table of prevailing Meteorological Conditions (numbers as in other Table).

No. of case.	Date of delivery.	Date of symptoms.	Barometer.	Temperature.	Wind.
1	Aug. 22	Aug. 28	Rising first 4 days; falling last 3 days	Falling first 4 days; rising last 3 days	2 days N.; 5 days E. (kidney).
2	Sept. 4	Sept. 10	Rising	Steady; falling last 2 days	Southerly.
3	„ 13	„ 18	Steady	Rising 3 days; falling last 3 days	4 days S.W.; 2 days N.E.
4	„ 14	„ 18	„	Rising 2 days; falling last 3 days	3 days S.W.; 2 days N.E.
5	„ 14	„ 20	Steady; rising last 2 days	Rising 2 days; falling last 5 days	3 days S.W.; 2 days N.E.; 2 days S.W.
6	Oct. 26	Oct. 30	Steady; falling	Steady 4 days; falling 7° last day	Due W.
7	Nov. 23	Nov. 29	Rising first 4 days; falling last 3 days	Falling 3 days; rising 3 days; falling 5° last day	S.W.
8	„ 26	Dec. 1	Steady	Falling slowly	„
9	„ 29	„ 3	Rising first 2 days; falling last 4 days	Falling first 2 days; rising last 4 days	S. and S.W.
10	„ 28	„ 5	„ „	„ „	„
11	Dec. 1	„ 6	Falling first 4 days; rising last 2 days	Rising steadily	S.W.
12	„ 1	„ 5	Falling first 4 days; rising last day	„	„
13	„ 4	„ 9	Steady; rising	Rising 4 days; falling 9° last day	„
14	„ 11	„ 15	Rising first 3 days; falling last 3 days	Rising 3 days; falling last 3 days	W.S.W.

Dr. Boxall said that with reference to the first case quoted by Dr. Dakin, the serious symptoms which occurred during the administration of a sublimate douche were probably not the result of mercurialism *per se* but of shock to the system. This was brought about by the sudden passage of foreign material into the blood stream through the uterine sinuses. In the maternity department of University College Hospital some years ago a woman died suddenly after an intra-uterine injection of carbolic solution. The patient was immediately seized with serious symptoms and died in a few minutes. Dr. Dakin had at first failed to obtain albumen with heat and nitric acid, when, in addition to albumen, mercury was present in the urine. This failure the author of the paper attributed to a formation of albuminate of mercury. He wished to point out that though albuminate of mercury is soluble in excess of albumen, all the albumen is thrown down by heat and nitric acid. The only explanation he could offer was that albumen must have been present in too small a quantity to redissolve the precipitate at first formed. This precipitate, falling to the bottom of the specimen glass, would escape detection unless the urine were shaken up before the application of the test. As one of Dr. Dakin's more immediate predecessors at the General Lying-in Hospital he was afforded an excellent opportunity of observing the results obtained by carbolic acid and permanganate of potash compared with corrosive sublimate as an antiseptic agent. He drew the attention of the Society to a table representing the morbility among all the patients admitted to hospital during a period of sixteen months ending December, 1884. During the first half of this period carbolic acid and permanganate of potash were employed, and during the latter half corrosive sublimate. Though a steady decline was visible, mainly as the result of better nursing during the carbolic and Condy era, a very marked improvement followed the introduction of perchloride of mercury. This improvement was most strikingly manifest as regards pyæmia, septicæmia, and local pelvic mischief, which, since the introduction of sublimate, had been almost entirely eliminated from the causes of fever. At the same time pyrexia attributable to other causes had also showed a steady decline though not in so marked a degree. The sublimate solution then in use was 1 in 2000 both before and after labour in the delivery rooms and also in the lying-in wards. Among 240 patients delivered during this sublimate era but three cases of mercurialism occurred, and, moreover, compared with those related by Dr. Dakin, the symptoms were very slight. Again, his experience as physician to the same hospital during the past five months was altogether at variance with that of Dr. Dakin. For though ten cases of mercurialism have occurred among 105 deliveries the symptoms have, as before, been very slight despite the fact that the solution (1 in 1000) at present employed immedi-

ately after labour, when doubtless absorption would be most liable to occur, is double the strength of that originally used. Though entirely agreeing with Dr. Dakin on several points, he was compelled to look upon the cases related by him as those of severe mercurialism, the cause of which does not appear to be satisfactorily explained. However, he desired to point out, as being a matter of practical importance, that the solution originally employed became deteriorated in strength by the alkalinity of the London water. It was his practice to make a concentrated aqueous solution which might stand by for weeks, and from this to prepare the solution for immediate use in the wards, instead of making it directly from the glycerine solution as delivered from the chemist. This precipitation, which occurred on standing, might be entirely prevented by the addition of a small quantity of acid, sufficient to neutralize the alkalinity of the water. Dilute hydrochloric acid (B. P.) in the proportion of ʒiv to ʒj of solid sublimate (which would give no more than ♏j in ʒiv of 1 in 1000 solution) appeared to be quite sufficient to effect this purpose and to maintain the strength of the standard solution.

Dr. William Duncan wished to know whether precautions were always taken, after using the perchloride douche, to empty the vagina, either by pulling back the perinæum or (in those cases where the perinæum was sutured) by allowing all fluid to drain away through the vaginal pipe after the tubing had been removed. He had always adopted this precaution and had never yet met with a case of mercurialism after injection. He also thought that there was more likelihood of poisoning in cases where the mucous membrane of the vagina was extensively denuded, and in hot weather.

Dr. John Phillips had gathered from Dr. Dakin's paper that eight deaths were due to intra-uterine injection and three to absorption through laceration of the perinæum. He thought the question as to the right or wrong of intra-uterine injections was still *sub judice;* as regards the vaginal injections, while there was no laceration the use of the solution might be safe, not otherwise. Moreover, it had been stated on very good grounds that a chemical decomposition took place on a wounded surface, albuminate of mercury being formed, which was almost inert. He had made it his practice to use a 1 in 2000 solution to dip the whole hand into before each examination. Dr. Phillips also asked Dr. Dakin if any colouring matter was usually added to distinguish the solution. He had been accustomed to add sufficient litmus to produce a pale purple colour.

Dr. Matthews Duncan recognised the supreme importance of the subject now brought before the Society in a valuable contribution. He remembered well the wonderful diminution of morbility in the Edinburgh Maternity Hospital when antiseptic treatment by carbolic acid was introduced there. Now he had

no maternity hospital unfortunately but only the experience acquired in home practice and in consultations. Nothing in the history of midwifery could show such beneficent results in practice as antiseptics; and the importance of details was shown by Dr. Boxall's table of the results in the York Road Hospital, a gradual and very large diminution of morbility as the antiseptic was changed from Condy's fluid to carbolic acid and from that to corrosive sublimate, from first to last a diminution of more than 30 per cent. The paper showed us one of the dangers of mercurial antiseptics, and he would remark that he would not be satisfied with care taken after the mercurial poisoning began. Such care might be too late; and, moreover, however successful such cases, evil was already done. In consequence, he confined the use of corrosive sublimate to one application or an occasional application, using carbolic acid for the continuous antiseptic washings. He had not seen hydrargyrismus when the antiseptic was used in this way. Great care must be taken to leave no pool of the solution inside the patient. This is especially necessary when there occurred what had been called ballooning of the vagina. In passing he would remark that such ballooning occurred apart from delivery as readily as after delivery, and was not accounted for by the condition of the perinæum but rather by the state of intra-abdominal pressure.

Dr. PARAMORE ventured to invite the attention of the President and Fellows to alcohol as an antiseptic in the lying-in room. He was a great believer in antiseptic midwifery, but he thought as the uses of carbolic acid and bichloride of mercury were not without risk that alcohol might be given a fair trial as an injection both during and after labour. He spoke favourably of the napkins which are ordinarily used after delivery being soaked with alcohol.

Dr. GRAILY HEWITT considered the facts and observations now brought before the Society in the paper of Dr. Dakin and in the communication by Dr. Boxall as of great scientific value and importance. It need hardly be pointed out, however, that the practice of midwifery in private and in a lying-in hospital could not be looked at as identical so far as necessity for frequent use of antiseptic injections was concerned. He was anxious to insist upon this, for he felt assured that if it went abroad that the internal injection of a dangerous antiseptic such as corrosive sublimate was, in the opinion of this Society, essential to the safety of the lying-in patient it would be the cause of infinite mischief. No doubt in a lying-in hospital extreme precautionary measures were justifiable, but in private practice less dangerous materials could be employed and the frequent use of injections could not be held to be necessary.

Dr. ROGERS said that the case of sudden death from injecting a solution of carbolic acid into the uterus mentioned by a pre-

ceding speaker reminded him of one that had occurred at the Samaritan Hospital. The case was not a puerperal one but one of fibroid enlargement of the uterus with menorrhagia. The cervix had been well dilated; a strong solution of iodine was injected into the uterus; immediately the patient cried out with violent pain and died almost instantaneously. At the post-mortem no sign of the solution (the usual one frequently used) having passed into the veins or Fallopian tubes could be discovered; the body of the uterus only was stained. Dr. Rogers had never used for injection into the uterus either carbolic acid or bichloride of mercury; he had always continued the injection of tincture of iodine and water, one or two drachms to the pint, and he had never seen or known any bad result.

Dr. CHAMPNEYS said that while agreeing with much that had been said by Dr. Matthews Duncan and Dr. Graily Hewitt, he feared that, so far from promoting the practice of sublimate irrigation, the present discussion might hamper those who rightly wished to use it in suitable cases. Private practice and hospital practice differed no doubt in one respect, namely, that while in both cases the patient required protection from infection by the accoucheur and nurse, in hospital practice she also required protection from other patients. In hospital practice we had to balance the risk of sepsis against the risk of mercurialism, and he (Dr. Champneys) unhesitatingly embraced the latter. During the five years which Dr. John Williams and he had charge of the General Lying-in Hospital their total mortality from all causes had amounted to seven per thousand, and in the face of these results he cheerfully accepted the responsibility of the risk of mercurialism by routine post-partum irrigation with corrosive sublimate. In private practice the one important thing was antiseptic cleanliness of the hands, and he believed that if accoucheurs kept their hands soaked during a labour in solution of corrosive sublimate in water or glycerine, puerperal fever would practically be banished. As regards sublimate irrigations after delivery in private, he now reserved them for cases which were specially liable to infection,—cases of operation or manual delivery of the placenta. In these he did not hesitate to wash out the uterus (if entered by the hand) or vagina with corrosive sublimate, 1 in 2000 or 1 in 1000, but did not usually repeat the sublimate, preferring to leave one of Ehrendorfer's bougies of iodoform in the uterus. These take three days to melt and keep the parts constantly irrigated with iodoform. In simple cases in private he used permanganate of potash after delivery.

Dr. DAKIN, in reply, thanked those Fellows who had made remarks, and especially Dr. Boxall for his information as to the present mode of use of sublimate at the General Lying-in Hospital, for his table showing the brilliant results following the employment of that drug, and his observations on cases of mercurialism which

had recently occurred there. He said he had since tested urines from cases douched with perchloride and had found a minute trace of albumen in nearly all, including that of women who had no symptoms. He was quite ready to accept Dr. Boxall's explanation of the larger percentage of cases occurring at the time they did. In reply to Dr. M. Duncan, he said the nurses diluted the stock solution. No laceration of the vagina that could be felt existed in any of the cases, but no ocular inspection of the interior of the vagina was made, and as regards the weather he had appended a table showing the variations, which, however, threw little or no light on the subject. His own cases had all occurred in cold weather, Dr. Boxall's in hot. In answer to Dr. Phillips, the solution of sublimate was not coloured but eucalyptus oil was added. To the President he answered that the percentage of morbility remained quite as low as the test figures in Dr. Boxall's table.

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